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ABSTRACT

This annotated bibliography contains citations concerned with the intercountry movement of physicians and nurses throughout the world. Entries are limited to material completed between January 1, 1964 and January 1, 1974. Citations primarily include books, journal articles, and reports. Unpublished documents from governmental or international organizations that provide guidance for research methodology on the migration of professional personnel or recommend alternative actions for modulating migration flow are also included. The entries are grouped under six major subject headings: (1) patterns and dimensions of migration; (2) factors fostering migration; (3) impact of migration; (4) methodologies for studying the migration process; (5) intervention strategies; and (6) training and evaluation of foreign physicians and nurses. A seventh subject heading, labeled "Other" includes material obtained subsequent to the classification of entries within the subject areas. Each entry appears in its entirety under the first subject area of the bibliography to which it relates. When an entry pertains to more than one subject, it is listed by citation number under each relevant topic. Author and geographic indices are provided. The author index includes both principal and secondary authors collaborating on a work; the geographic index contains both country names and regions of the world. (Author/SPG)

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INTERNATIONAL MIGRATION OF PHYSICIANS AND NURSES

an annotated bibliography

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DHEW Publication No. (HRA) 75-28

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Health Resources Administration

Bureau of Health Resources Development
Division of Medicine

January 1975

PREFACE

This annotated bibliography is published as a part of the health manpower analytic and bibliographic publication series of the International Studies Staff (ISS), of the Division of Medicine (DM) of the Bureau of Health Resources Development (BHRD), Health Resources Administration (HRA). A previous work in this series, *The Foreign Medical Graduate: A Bibilography*, was published in November 1972. That publication included citations of works relevant to the education of foreign medical graduates (FMGs) abroad, the flow of FMGs to the United States, and the training and utilization of FMGs in American medicine. Citations in that publication were not annotated.

The scope of this annotated bibliography is much broader than that of the earlier one. Its preparation is the result of a collaborative effort between the International Studies Staff and the World Health Organization (WHO), Division of Health Manpower Development. A significant number of the citations in the bibliography were compiled by WHO staff in preparation for its study of the international migration of physicians and nurses. Thus, citations are concerned with the intercountry movement of both physicians and nurses throughout the world and include several articles from international journals. All works cited in *The Foreign Medical Graduate: A Bibliography* are included in this bibliography except newspaper articles, letters to the editor, journal articles dealing with United States medical students studying outside the United States, and certain unpublished materials, e.g., graduate theses.

The organization and annotation of the material was done by Riitta-Liisa Kolehmainen, M.D., M.P.H., School of Public Health, Harvard University. General guidance and assistance in preparation for publication was provided by the ISS Staff, especially by Frances Sullentrop, DHEW Management Intern. The cooperation of Dr. Alfonso Mejia and his staff of the Division of Health Manpower Development, World Health Organization is most gratefully acknowledged.

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INTRODUCTION

Entries in this bibliography are limited to material completed within the 10 year period from January 1, 1964 to January 1, 1974. Citations primarily include books, journal articles, and reports. Unpublished documents from governmental or international organizations which provide guidance for research methodology on the migration of professional personnel or recommend alternative actions for modulating migration flow are also included.

The entries are grouped under six major subject headings:

1. Patterns and dimensions of migration;
2. Factors fostering migration;
3. Impact of migration;
4. Methodologies for studying the migration process;
5. Intervention strategies; and
6. Training and evaluation of foreign physicians and nurses.

A seventh subject heading, labeled "Other," includes material obtained subsequent to the classification of entries within the six subject areas.

Each entry appears in its entirety under the first subject area of the bibliography to which it relates. When an entry pertains to more than one subject, it is listed by citation number under each relevant topic. Thus, the subject under which an entry may be listed in full is not necessarily the major subject of the entry. Conversely, entries which do not appear in full under a given subject, but rather are listed by number, may devote the major part of the work to that subject.

The purpose of the annotations is to provide the user with general information about each work, rather than to summarize in great detail the contents of each document. With this general information the users may then select the works they wish to pursue in greater detail. When applicable, the presence of statistical tables and/or bibliographic references is noted at the end of the annotation.

For the convenience of users, author and geographic indices are provided. The author index includes both principal and secondary authors collaborating on a work; the geographic index contains both country names and regions of the world.

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LIST OF ABBREVIATIONS

AAMC	Association of American Medical Colleges
AMA	American Medical Association
ANA	American Nurses Association
CASTALA	Conference on the Application of Science and Technology in Latin America
ECFMG	Educational Council for Foreign Medical Graduates
EEC	European Economic Community
FAO	Food and Agricultural Organization of the United Nations
FLEX	Federation Licensing Examination
FMG	Foreign Medical Graduate
GNP	Gross National Product
ILO	International Labor Organization
IRME	International Society for Research in Medical Education
M.D.	Doctor of Medicine
N.H.S.	National Health Service
OECD	Organization for Economic Cooperation and Development
PAHO	Pan American Health Organization
Ph.D.	Doctor of Philosophy
U.N.	United Nations
UNESCO	United Nationa Educational, Scientific, and Cultural Organization
UNITAR	United Nations Institute for Training and Research
U.S.	United States
USMG	United States Medical Graduate
WHO	World Health Organization
UK	United Kingdom
USSR	Union of Soviet Socialist Republics
UWI	University of the West Indies

PATTERNS AND DIMENSIONS OF MIGRATION

I. PHYSICIAN MIGRATION

A. RECIPIENT COUNTRIES

1. Beljan, J. R. The foreign medical graduate in California. *California Medicine*, vol. 116, April 1972, pp. 99-105.

Medical migration and FMG licensure statistics in the United States are reviewed, followed by an explanation of the ways by which a foreign graduate may enter AMA-approved internships and residencies. Two California Legislature bills are examined. The first bill allows U.S. specialty board certification to be substituted for required internship service. The second bill deals with U.S. citizens studying in Mexico and, if enacted, would lead to confrontation with the ECFMG. In conclusion, recommendations for dealing with the FMG problem are made.

2. Council on International Educational and Cultural Affairs. *Some facts and figures on the migration of talent and skills.* Washington, D.C.: U.S. Department of State, March 1967.

The Council on International Educational and Cultural Affairs and its position on the brain drain are described, followed by the code of Federal regulations dealing with the exchange visitor program. Statistical charts are given on the professions of immigrants and their home countries, and, temporary visitors who adjusted status or obtained waivers from FY 1962 to FY 1966. In conclusion, the Mutual Educational and Cultural Exchange Act of 1961 is presented. Several statistical tables.

3. Datagram: The dependence upon foreign-trained M.D.'s in our medical care system. *Journal of Medical Education*, vol. 47, June 1972, pp. 496-98.

In the 20 years from 1950 to 1970, the supply of physicians in the United States has increased from 220,000 to 334,000. The physician population ratio has risen from 145 per 100,000 to 164 per 100,000. This higher ratio is due almost entirely to the immigration of foreign-trained physicians, for without this immigration the ratio would be virtually the same in 1970 as in 1950. The number of FMGs who were licensed to practice medicine in the United States increased from 300 in 1950 to 3,000 in 1970. During this same period, the number of FMGs in internships, residencies, and clinical fellowships rose from 2,000 to 20,000.

4. Datagram: Foreign medical graduates in U.S. training programs. *Journal of Medical Education*, vol. 43, March 1968, pp. 414-15.

Data on the numbers and proportions of FMGs enrolled in graduate training programs in U.S. hospitals as of September 1, 1966 are presented.

5. Datagram: Foreign–trained, full-time faculty in United States medical schools. *Journal of Medical Education*, vol. 45, March 1970, p. 185.

As of June 30, 1968, the total number of foreign-trained full-time faculty, including those with either M.D. or Ph.D. degrees, in U.S. medical schools was 2,961, or 15.3 percent of all full-time faculty. Data on the countries of origin of this component of the faculty are presented.

6. Datagram: Import of medical manpower. *Journal of Medical Education*, vol. 39, November 1964, pp. 1056-57.

From 1950 to 1963, the number of foreign-trained physicians added annually to the medical profession in the United States rose from about 300 to 1,451. This latter figure of new licentiates is approximately equal to the output of 14-16 average-sized U.S. medical schools. Further data are presented on the increasing numbers of foreign-trained physicians in internships and residencies in the United States.

7. Datagram – physician manpower: Foreign trainees. *Journal of Medical Education*, vol. 41, December 1966, pp. 1271-72.

Data on foreign medical graduates serving as house officers in U.S. hospitals are presented. The proportion of intern positions filled by FMGs rose from 9 percent in 1950 to 24 percent in 1965. Residency positions occupied by FMGs over the same period of time rose from 9 percent to 29 percent. Most of these FMGs were located in hospitals not affiliated with medical schools.

8. Datagram: Trends in graduate medical education. *Journal of Medical Education*, vol. 47, March 1972, pp. 227-31.

The future pattern of medical specialties among practicing physicians in the United States is predicted on the basis of the distribution of residency training over a period of 10 years. Data on the specialty choices of FMGs compared to U.S. medical graduates are given with an indication of the changes over time.

9. DeVault, V.T. and Owen, G. U.S. visa policies relating to doctors and medical students. *Bulletin of the American College of Surgeons*, vol. 53, March-April 1968, p. 73.

United States visas relating to the entrance of physicians and medical students to this country are explained.

10. Dublin, T.D. The migration of physicians to the United States. *New England Journal of Medicine*, vol. 286, April 20, 1972, pp. 870-77.

Foreign medical graduates totalled 63,000 in the United States in 1972. This number was one-fifth of all active physicians, one-third of interns and residents, and one-third of newly licensed physicians in that year. In the past 10 years, the number of FMGs entering the United States has increased at a faster rate than domestic production. Developing countries, particularly those in the Far East, have become the principal sources of supply. Many exchange visitor physicians remain in the United States permanently. It is recommended that the United States discontinue the active recruitment of FMGs to meet domestic needs.
Over 30 references.

11. Evans, J. P. and Rossin, A. D. The significance for neurology of a recent survey of foreign medical graduates in neurological surgery and in pediatrics. *Transactions of the American Neurological Association*, vol. 94, 1969, pp. 259-61.

Results from a survey of neurosurgeons, conducted by the American Association of Neurological Surgeons, are presented. In 1967, 17 percent of neurosurgical trainees were foreign graduates; in 1968, 21 percent were from other countries.

12. Fein, R. *The doctor shortage: An economic diagnosis*. The Brookings Institution, Washington, D.C., 1967, pp. 85-87 and 143-44.

Foreign medical graduates are discussed as an additional supply of physicians in the United States. It is felt that U.S. immigration policy should be determined on bases other than the "shortage" in the United States, particularly when dealing with manpower which is of such need in the developing economies.

13. Ferguson, D.C. The Indian medical graduate in America, 1965: A survey of selected characteristics. *Journal of the Indian Medical Association*, vol. 48, March 16, 1967, pp. 291-98.

Characteristics of graduates of Indian medical schools residing in the United States as of June 1965, based on data taken from the AMA master physician lists, are described. The following were analyzed: school and year of graduation, age and geographic distribution, training and specialty status, citizenship, licensure, visa status, and professional appointments.
Several statistical tables.

14. Ferguson, D.C. The Iranian medical graduate in America: A survey of selected characteristics. *Acta Medica Iranica*, vol. 10, 1967, pp. 47-66.

The AMA files of Iranian medical graduates were studied for the following characteristics: sex, school and year of graduation, age, training status and locality, specialty interests, citizenship and visa status, specialty boards, professional

activity, licensure status, and medical school appointments. The proportion of trainees holding exchange visitor visas was 57.1 percent. The choice of specialty was more similar to that of the total FMG group than that of U.S. graduates. Geographic location of residencies did not seem to play as great a part with Iranians as with other FMGs.
Several statistical tables.

15. Ferguson, D.C. and Dirican, R. The Turkish medical graduate in America, 1965: A survey of selected characteristics. *Turkish Journal of Pediatrics*, vol. 8, July 1966, pp. 176-90.

The AMA files of Turkish medical graduates were studied for school and year of graduation, training status, specialty boards, type of practice, and citizenship. It was found that Turkish interns and residents typically have come to the northeastern United States. Choice of specialty was very similar to that of U.S. graduates. Of those not in training, 45 percent were full-time members of hospital staffs; 38.6 percent had obtained State licensure.
Several statistical tables.

16. Gesenius, H. (Foreign physicians and nurses in the German Federal Republic.) *Medizinische Klinik*, vol. 67, August 11, 1972, pp. 1057-60. (German).

The numbers of foreign physicians and nurses in the Federal Republic of Germany are noted. The dilemma of brain drain and attitudes toward foreign medical personnel are briefly discussed.

17. Gish, O. Commonwealth medical immigrants. *The Lancet*, September 7, 1968, pp. 566-67.

The results of the February 1968 changes in the Commonwealth Immigrants Act are discussed. In June and July 1968, the number of Commonwealth doctors who received immigration vouchers increased by more than one-half. It is predicted that 550 additional Commonwealth doctors will enter Great Britain each year due to these changes.

18. Gish, O. The Royal Commission and the immigrant doctor. *The Lancet*, June 29, 1968, pp. 1423-24.

It is stated that the United Kingdom owes the developing countries over 100 million pounds for use of their physicians on the junior staffs of British hospitals. The Royal Commission on Medical Education is criticized for the small number of medical school openings for students from overseas. It is predicted that the United Kingdom will continue to rely on overseas doctors for the foreseeable future.

19. Gish, O. and Robertson, A. Britain's medical "brain gain": Where immigrant doctors go – and why. *New Statesman*, vol. 77, March 14, 1969, pp. 353-54.

In Great Britain, the proportion of foreign-born doctors is at its highest at the junior levels in the lower ranked hospitals. Overseas doctors who come to Great Britain for training are being used to fill jobs that British doctors do not want. The recruitment of foreign-born doctors into various specialties differs inversely with the attractiveness of these specialties to young British doctors. There is a decline in mutual understanding between doctor and patient due to cultural differences. Little is known about the effects of migration of developing countries.

20. Haug, J.N. and Stevens, R. Foreign medical graduates in the United States in 1963 and 1971: A cohort study. *Inquiry*, vol. 10, March 1973, pp. 26-32.

An eight-year follow-up study was made on the location and activity of all foreign medical graduates known to be in the United States in 1963. The 1963 AMA master file on FMGs was matched against the 1971 file. Of all FMGs in the United States in 1963, 83.6 percent were still here in 1971; 73.7 percent of those who were interns and residents in 1963 were here in 1971. The number of FMGs in office based practice increased by 6,000 in the eight-year period.

21. Institute of Applied Manpower Research, New Delhi. *Indian physicians in the U.S.: A stock study*. New Delhi, 1969.

Indian physicians in the United States were examined by medical school of graduation, age and sex, period of graduation, medical specialty, principal employer, and State of practice. Both trainees and non-trainees were studied.
Several statistical tables.

22. Jagu, J. (Survey of the number of physicians employed in the pharmaceutical industry) *Cahiers de Sociologie et de Demographie Medicales*, vol. 10, 1970, pp. 148-49. (French).

A survey was made of 265 pharmaceutical laboratories in France. They employed 632 physicians, 95 percent of whom were of French nationality.

23. Knobel, R.J., Jr. Placement of foreign-trained physicians in U.S. medical residencies. *Medical Care*, vol. 11, May-June 1973, pp. 224-39.

AMA data were used to show the variable placement of FMGs among U.S. residency programs. It was found that FMGs trained in countries with high orders of economic and medical development were placed in affiliated hospitals and in preferred medical specialty programs. Those trained in developing countries were found in non-affiliated hospitals and less preferred specialties. This non-homogeneity in the graduate medical education of FMGs was considered evidence of non-homogeneity in the medical qualifications of both groups.
Several statistical tables.

24. Kosa, J. The foreign-trained physician in the United States. *Journal of Medical Education*, vol. 44, January 1969, pp. 46-51.

A random sample of 1,520 physicians from the 1967 AMA Directory was studied. The FMGs were found to be concentrated in internships, residencies, and other full-time hospital appointments, and were relatively evenly distributed geographically. Fewer foreign- than U.S.-trained physicians had National Board or specialty board certification, membership in specialty societies, and teaching appointments. It was suggested that foreign training constitutes a handicap that the physician is never able to overcome completely.

25. Lewis, D. J. The fate of the psychiatric resident: What becomes of the foreign medical graduate. *Laval Medical*, vol. 42, February 1971, pp. 172-79.

A follow-up study was made of graduates of 1958-1969 from McGill University in Canada. Of these, 68 percent had remained in Canada. One-third to one-fourth of those who came from the developing countries stayed in Canada. Reasons for return of residents to their home countries were found to be largely situational and motivational in character. Suggestions for alternative ways of training are made.

26. Mosten, K. E. (Foreign physicians in the SYLF study: Thirty-nine percent have difficulties). *Lakartidningen*, vol. 67, July 8, 1970, pp. 3164-66. (Swedish).

One hundred foreign physicians who entered Sweden between 1951 and 1968 were asked if they had experienced discrimination in the job market. Sixty-six percent felt they had had the same opportunities as Swedish physicians, and 39 percent had language difficulties. Some ameliorating suggestions are made.

27. Patino, J. F. The surgical manpower drain. *Surgery*, vol. 72, November 1972, pp. 668-80.

The magnitude and causes of physician brain drain to the United States are reviewed, and the performance and problems of FMGs are discussed. It is concluded that, with the exception of FMGs in surgery, FMGs perform at a lower level than U.S. graduates and they are generally dissatisfied with U.S. training. Again excluding surgery, FMGs are rated as less competent than U.S. graduates. In conclusion, the role of the foreign-trained surgeon in a developing country is reviewed.

28. Registration in New Zealand of doctors from overseas. *New Zealand Medical Journal*, vol. 73, January 1971, pp. 37-39.

The present registration procedures for foreign doctors in New Zealand are described. New policy guidelines are proposed.

29. *Report of the National Advisory Commission on Health Manpower*, volume II. Washington, D.C.: U.S. Government Printing Office, November 1967, pp. 69-128, 307-09, and 370-72.

The Report of the Panel on Foreign Medical Graduates, which analyzes the role of FMGs in the United States, is included in this volume. The problems discussed include both quantitative and qualitative considerations, geographic

distribution, and implications for health care in the United States and abroad. Specific recommendations are made as to screening procedures, orientation and educational programs, visa policies, service of FMGs in U.S. hospitals, the Commission on FMGs, and a program of statistical information.
Several statistical tables.

30. Reynolds, G. M. The future of community medicine. *British Medical Journal*, vol. 4, December 11, 1971, pp. 670-73.

It is stated that the number of overseas doctors entering the general practice in Great Britain is increasing. Toward the end of 1970, over 25 percent of general practitioners joining the National Health Service were born overseas.

31. Sutnick, A. I. First symposium on the problems of foreign medical graduates. *Journal of the American Medical Association*, vol. 213, September 28, 1970, pp. 2241 - 46.

The proceedings of a symposium sponsored by the Philadelphia County Medical Society are reported. The role of U.S. medicine in international medical education, the scope of the migration problem, immigration alternatives to FMGs, and licensure considerations were discussed. The paper concludes with a report on round-table discussions on social and cultural adaptation, education in the English language, and medical topics.

32. Taxay, E. P. Refugee Cuban physician: A final report on the Miami program. *Journal of Medical Education*, vol. 41, January 1966, pp. 20-27.

A study was made of a group of Cuban refugee physicians who had graduated from the University of Havana School of Medicine, arrived in Miami between December 1960 and January 1964, and completed at least one of the intensive three-month courses offered by the University of Miami School of Medicine. Demographic and achievement data are summarized and, where appropriate, are related to specialty, year of graduation, number of courses taken, and dates when these courses were taken.
Several statistical tables.

33. Warren, R. and Haber, C. D. The foreign graduate as a surgical resident. *Surgery*, vol. 70, October 1971, pp. 546-48.

Of the total number of surgical residents in the United States, 35 percent are FMGs. In a study of 237 graduates of Latin American medical schools who were in surgical training in the United States in 1968, the median age was 31 years. Of these, 188 were married, and 122 held immigrant visas. Chief donor countries were Argentina, Mexico, Colombia, and Peru. Five FMGs in surgical training were interviewed and their opinions are reported. Some intervention strategies are discussed.

34. Wedgwood, R. J. The education of foreign medical school graduates. *Pediatrics*, vol. 46, November 1970, pp. 760-66.

The utilization of FMGs in the U.S. health care system is reviewed. It is concluded that, though the primary purpose of internship and residency is education, FMGs are recruited primarily for service. This is said to lead to dual standards of medical care.

35. West, K. M. Foreign interns and residents in the United States. *Journal of Medical Education*, vol. 40, December 1965, pp. 1110-29.

The numbers and geographic and specialty distribution of FMGs are reviewed, and U.S. immigration policies are discussed. It is emphasized that U.S. training programs often lack relevance to the trainee's future responsibilities in his/her own country. Some suggestions are made to increase the relevance.

36. West, K. M. Training for medical research: The world role of the United States. *The Journal of Medical Education*, vol. 39, March 1964, pp. 237-64.

Evidence is presented that there are 4,000 foreign trainees in medical research in the United States. Japan contributes the largest number. Nationality and geographic and specialty distribution of the trainees are presented. About 80 to 85 percent return to their native country where most continue in research. The implications of U.S. training are discussed.

37. Williams, K. N. and Lockett, B. A. *Foreign physician migration to the United States from the perspective of health manpower planning.* Prepared for the First Seminar on Health Manpower Planning of the Western Pacific Region of the World Health Organization, Manila, Philippines, September 1973.

The migration of FMGs into the United States, as it relates to the quantitative aspects of health manpower planning, is the focus of this report. Characteristics of the FMG population are discussed with special attention given to FMGs of the Western Pacific Region. Recent developments in the health care area in the United States are reviewed, and recommendations are made for measures to deal with this migration. It is pointed out that lack of implementation of previous recommendations has impeded effective health manpower planning.
130 p.

38. Williams, K. N. and Lockett, B. A. Migration of foreign physicians to the United States: The perspective of health manpower planning. *International Journal of Health Services*, vol. 4, Summer 1974 [in press].

The migration of FMGs into the United States is examined as it affects health manpower planning in this country. Background information and data on immigration, demographic and professional characteristics, and performance of FMGs are reviewed. Past recommendations concerning FMGs are discussed and the need for implementation of national policy guidelines is highlighted.

39. Williams, K. N. and Lockett, B. A. *Migration of physicians to the United States: The perspective of the health manpower planner.* Prepared for the Pan American Conference on Health Manpower Planning, Ottawa, Canada, September 1973.

This report is essentially the same as entry no. 37, with special attention given to FMGs from Canada and Latin America.
130 p.

40. Williams, K. N. and Politzer, R. M. A comment on "Placement of foreign-trained physicians in U.S. medical residencies." *Medical Care*, vol. 12, July 1974 [in press].

The assumptions, approach, and conclusions contained in the article by R. Knobel (entry no. 23) are critically examined in this letter to the editor. A reply written by R. Knobel appears in this same issue of *Medical Care*.

41. Wu, L.T. and Wu, J. The population and distribution of China educated M.D.'s in the United States. *Asian Medical Journal*, vol. 13, July 1970, pp. 124-32.

A short presentation of U.S. licensure statistics for graduates of medical schools in mainland China, Taiwan, and Hong Kong, and their specialty and geographic distribution in the United States is given.

B. DONOR COUNTRIES

42. Abel-Smith, B. and Cales, K. *British doctors at home and abroad.* Occasional Papers on Social Administration, no. 8. London: G. Bell and Sons, 1964.

The following are identified in this study: the fields of work of British-trained doctors in the United Kingdom and abroad, the number no longer practicing medicine, the number in teaching and research and in private and industrial practice, the extent of emigration within medical specialties, the distribution of work of physicians in the United Kingdom and abroad, and whether a greater proportion of young physicians emigrate. It was found that the most frequent period for migration was three to six years after licensure. The view that most of those going abroad were ex-general practitioners was not supported by the study, though the most common feeling mentioned by British physicians in Canada and Australia answering the questionnaire was unwillingness to enter general practice in the United Kingdom. About 30 percent of British doctors resident abroad were in low income countries.
Several statistical tables. 63 p.

43. Aird, L. A. and Silver, P. H. Women doctors from the Middlesex Hospital Medical School (University of London) 1946-67. *British Journal of Medical Education*, vol. 5, September 1971, pp. 232-41.

A survey was made of 160 women physicians from the Middlesex Hospital Medical School. Sixteen were no longer in the United Kingdom.

44. Angara, A.A. *Health manpower in the developing countries: Problems and needs.* WHO Doc. WPR/RC22/TD1, 1971, pp. 15-18.

An overview of health manpower in general and the situation in the WHO Pacific Region in particular is presented in this WHO working paper. A section on brain drain is included. The causes for migration are seen to be financial, vocational, and political. Some possible measures that could help limit this outflow are examined.

45. Bowers, J. Z. and Rosenheim, I., eds. *Migration of medical manpower. Papers from an International Macy Conference.* The Josiah Macy, Jr. Foundation, New York, 1971.

Migration patterns and factors affecting them are explored in studies of several countries. Some general observations are made about migration of medical manpower. U.S. and British programs to strengthen medical education in developing countries are explained. The International Centre for Theoretical Physics in Trieste, a regional center of excellence, is described as possible model to follow to prevent migration of physicians from developing to developed countries. The ECFMG examination is described.
Several statistical tables and over 30 references. 194 p.

46. Crane, P. S. An unresolved problem for developing countries: Korea as exhibit "A". *Journal of the American Medical Association*, vol. 209, September 29, 1969, pp. 2039-41.

Korean medical education and socioeconomic pictures are described. The large migration of Korean physicians to the United States is criticized, and some measures to decrease it are suggested.

47. Cuyegkeng, J. The (external) migration of Philippine medical graduates – the magnitude, causes, and solutions. *The Filipino Family Physician*, vol. 9, October-December 1971, pp. 20-33.

From 1965 to 1969, 59.5 percent of the total output of Philippine medical graduates passed the ECFMG examination. Of the estimated number of living and practicing Philippine doctors, 39.8 percent were out of the country as of December 31, 1969. The most common reason for migration was desire for further training in a medical specialty. Some solutions to this migration problem are suggested.

48. Duff, S. L. and Fish, D. G. Canadian-trained physicians in the United States internships and residencies: "Operation Retrieval" and report of statistics, 1966-68. *Canadian Medical Association Journal*, vol. 102. February 1970, pp. 291-95.

The Association of Canadian Medical Colleges began "Operation Retrieval" in 1967 in response to a shortage of medical teachers and scientists in Canada. The purpose of this program was to contact and survey Canadian medical graduates and keep them informed of career opportunities at home. Publications produced for graduates of Canadian medical schools who were interns and residents in the United States are described. Site visits made to Los Angeles, Boston, and New York reveal that the graduates' concerns centered around difficulties in communication with Canada. A statistical report on number and location, field of specialization, and year of graduation is given. The decreasing numbers are believed to reflect improving Canadian facilities and the use of the U.S. military draft.
Several statistical tables.

49. Gibson, T.C. British physicians on medical school faculties in North America. *British Medical Journal*, vol. 1, March 18, 1967, pp. 688-92.

A questionnaire was sent in 1965 to physicians with British qualifying degrees and British nationality on North American medical school faculties in full-time or part-time capacities. It was learned that the majority emigrated in the decade of 1950-1959 and within 10 years after qualification. The most frequently stated reasons for emigration were dissatisfaction with promotional opportunities and working conditions in the United Kingdom and better economic conditions in the United States. Fifty percent said their decision to migrate was influenced by conditions in the National Health Service.

50. Gish, O. Brain drain from the Philippines – Part 2. *International Educational and Cultural Exchange*, vol. 4, Winter 1969, pp. 61-67.

This critical review of Howland's article (see entry no. 57) strongly opposes his views. Today's brain drain, rather than a positive situation, is being paid for increasingly by poor people of poor countries, whose descendants may or may not share in tomorrow's brain gain.

51. Gish, O. British doctor migration, 1962-1967. *British Journal of Medical Education*, vol. 4, December 1970, pp. 279-88.

British emigrant doctors were studied by training, age, occupation, and country of emigration. It was found that some 800 British medical graduates left Great Britain each year and about 400 returned. The typical emigrant to a developing country of which there are slightly more than 200 per year, was either older or younger than the colleague going to North America or Australia. Most of the emigrants had not established themselves in permanent medical posts in Great Britain prior to emigration.
Several statistical tables.

52. Gish, O. Emigration and the supply and demand for medical manpower: The Irish case. *Minerva*, vol. 7, Summer 1969, pp. 668-79.

The supply and demand for physicians in Ireland are calculated, and the scale and direction of Irish physician migration is reviewed. It is noted that over the last 10-15 years, the major direction of migration has shifted from England to the United States. The reasons are the type of staffing structure in hospitals with consequent lack of advancement, desire for specialization, better pay, and oversupply of physicians in relation to demand. Policy implications of this migration are discussed.

53. Gish, O. Medical education and medical migration. *Proceedings of the Royal Society of Medicine*, vol. 63, part 2, November 1970, pp. 1191-95. (Extract from *Report on the Symposium on the Problems of World Medicine*.).

Medical educators seem reluctant to examine the appropriateness of education programs they design for the roles which their students will eventually fill. This discrepancy is seen as an important factor behind medical migration. The dimensions and directions of this talent flow are examined and some suggestions for action are made. A short open discussion follows.

54. Gish, O. and Wilson, J. A. Emigrating British physicians. *Social Science and Medicine*, vol. 3, 1970, pp. 495-511.

Previous studies on medical emigration from Great Britain are discussed, followed by a review of the volume and reasons for this emigration and an examination of the effect of it on the availability of medical manpower in Britain. Medical immigration and medical emigration are compared to see if there is a relationship between the two. A pressing need for a modernized hospital staffing structure is seen.

55. Haug, J. N. and Martin, B. C. *Foreign medical graduates in the United States, 1970*. Chicago, Center for Health Services Research and Development, The American Medical Association, 1971.

This statistical summary prepared by the AMA provides data on the specialty, activity, location of practice, year of graduation, country of birth, age, and sex of foreign physicians in the United States by country of origin.
Over 30 references. 319 p.

56. Hill, K. R. Medical brain drain perspectives. *The Lancet*, February 17, 1968, pp. 351-53.

The causes, extent, and cost of British medical migration are discussed and suggestions are made for ways to modify the brain drain.

57. Howland, H. E. Brain drain from the Philippines. *International Educational and Cultural Exchange*, vol. 2, Fall 1967, pp. 23-28.

The medical migration picture from the Philippines is observed and it is concluded that there is an oversupply of physicians in that country. What appears in the short run to be a brain drain from a country may in fact be a unique contribution of that country to the world's cultural market. (See also entry no. 50.)

58. Institute of Applied Manpower Research, New Delhi. *Report of the Inter-Ministerial Group on the Brain Drain.* New Delhi, March 1971.

The migration of high-level manpower from India is examined. Recommendations are made on ways to establish a system for continuous review of this migration.
151 p.

59. Institute of Applied Manpower Research, New Delhi. *Supply of Doctors during Fourth and Fifth Plans.* IAMR Working Paper No. 3. New Delhi, 1971.

Available data on migration of Indian physicians are reviewed briefly. It is estimated that 12,000 to 12,500 Indian doctors were abroad in 1968, and net outflow is in the order of about 1,000 to 1,500 per year.
38 p.

60. Joorabchi, B. Physician migration: Brain drain or overflow? With special reference to the situation in Iran. *British Journal of Medical Education*, vol. 7, 1973, pp. 44-47.

The dimensions and causes of Iranian medical migration are discussed. It is argued that rather than a "drain" there is an "overflow" because the migrant's country is unable to absorb him. Some solutions are proposed, such as the Health Corps program of the Iranian Army.

61. The Korean Medical Association. *The progress in medical care and public health in the Republic of Korea.* Seoul, Korea, 1971, pp. 45-46 and 52-54.

The magnitude and direction of Korean medical migration are discussed. Up until 1971, the Korean government maintained a policy that encouraged emigration of medical personnel, primarily because of their potential contribution to the economic development of Korea upon their return. Now the policy has been adjusted so that a physician is allowed to go abroad only after duty in doctorless areas, and nurse exchange contracts are no longer signed by Korea.

62. Last, J. M. Migrating doctors. *Scottish Medical Journal*, vol. 14, December 1969, pp. 410-14.

The importance, economics, and causes of medical migration in Great Britain are discussed. British medical emigration is not seen as a serious problem in a numerical sense. Suggestions are made for changing medical education in developing countries in order to reduce emigration, though efforts toward this goal have failed thus far.

63. Last, J. M. and Broadie, E. Further careers of young British doctors. *British Medical Journal*, vol. 4, December 19, 1970, pp. 735-38.

After surveys in Great Britain in 1961 and 1966, further questionnaires were sent in 1969 to the 1,737 who responded in 1966. Of the 1,496 subsequent respondents, 12.5 percent were overseas. Canada was the most popular destination.

64. Ogston, D., Dawson, A. A., and McAndrew, G. M. Present employment of University of Aberdeen medical graduates, 1956-1958. *The Lancet*, vol. 2, August 23, 1969, pp. 427-28.

A survey of the 186 Aberdeen medical school graduates of 1956-1958 revealed that one-third of them were not practicing in Great Britain 10-12 years later. The losses resulted from emigration, the return of graduates of non-British origin to home countries, and the loss of women through marriage.

65. Ogston, D. and Ogston, W. D. Honours graduates in medicine of the University of Aberdeen, 1931-1960. *British Journal of Medical Education*, vol. 5, March 1971, pp. 30-33.

The percentage of Aberdeen University male graduates of British origin working overseas has risen from 4 percent for graduates of 1931-35 to 22 percent for those of 1951-55. During 1946-60, 23.5 percent of the honors graduates were abroad compared with 20.7 percent of those who did not obtain honors.

66. Ogston, D., Ogston, W. D., and Ogston, C. M. Origin and employment of the medical graduates of the University of Aberdeen, 1931-69. *British Medical Journal*, vol. 4, November 7, 1970, pp. 360-61.

A survey of University of Aberdeen graduates showed that one-fifth of the male graduates of 1946-1950 and 1956-1960 were working overseas. Canada and Australia were the most frequently chosen countries. Twenty-nine non-British graduates of 1931-1969 have remained in Great Britain.

67. Ozlak, O. and Caputo, D. *The emigration of medical personnel from Latin America to the United States: An alternative interpretation.* Presentation in a Pan American Conference on Health Manpower Planning, Ottawa, 1973. [To be published in *Educacion Medica y Salud*, vol. 7, Nos. 3-4, 1973.]

Characteristics and dimensions of physician migration from Latin America are described. An analysis is made of two common interpretations of migration: the liberal view that migration is beneficial to the entire world, and the nationalistic view which focuses on the negative effects of migration on the donor country. Lastly, an alternative interpretation is proposed that takes into account the structural reasons for migration.

68. Riddell, A. G. and Elliott, A. M. Fate of surgical registrars in the south-western region. *British Medical Journal*, vol. 1, February 7, 1970, pp. 359-60.

It is concluded from this survey of 86 British graduates who became surgical registrars that 37 percent of them eventually settled abroad. The reason given for migration was failure to obtain promotion in the National Health Service.

69. Rifka, G. E. and Churchill, C. W. Loss of medical manpower in a developing country. *Journal of Medical Education*, vol. 44, December 1969, pp. 1144-49.

Physicians of Lebanese nationality who graduated in Lebanon from 1954 to 1963 were studied. The emigrant group was questioned as to present nationality, place of work, date of and reason for emigration, and wife's nationality. Those remaining in Lebanon were asked their reason for staying. The main reason for migration was to obtain further training; the main cause for remaining was attachment to the home country. The United States and Canada were the most frequently chosen recipient countries.

70. Saroukhanian, G. Needs of the Middle East for health manpower. In *Education for health manpower in the Middle East*, edited by R. E. Nassif and J. D. Thaddeus. Beirut: American University of Beirut, 1967, pp. 25-39.

The demographic and socioeconomic features and health status of the Middle East are discussed, followed by a survey of the supply of health manpower and availability of medical education. The problem of "brain drain" is raised briefly.

71. Seale, J. The medical emigration controversy. *British Medical Journal*, vol. 2, December 12, 1964, pp. 1522-24.

The early experiences and conditions of medical practice in the British National Health Service are described. The official attitude of the Ministry of Health, which initially believed that the British doctor migration was small in volume, is criticized. Studies confirming the high migration figures are discussed.

72. Seale, J. R. Medical emigration from Great Britain and Ireland. *British Medical Journal*, no. 5391, May 2, 1964, pp. 1173-78.

Estimates are made of permanent emigration of doctors from Great Britain and Ireland to Canada, the United States, Australia, New Zealand, South Africa, and Southern Rhodesia during 1954-63. It is concluded that the number that have emigrated permanently is 4,392. It is estimated that the total number who have emigrated to all countries has been nearly 400 per year from Great Britain and more than 100 per year from Ireland.

73. Seale, J. R. Medical emigration from Great Britain and Ireland since 1962. *British Medical Journal*, September 3, 1966, pp. 576-78.

Medical migration statistics from Great Britain and Ireland are examined. The rate of medical emigration declined in 1961 and 1962, but from 1963 to 1965 the rate was higher than ever before. It is stated that there has been no increase in the number of British doctors remaining in Britain.

74. The Southern Ireland Faculty of the College of General Practitioners. Career and migration survey of medical graduates from University College, Cork. *The Journal of the Irish Medical Association*, vol. 58, January 1966, pp. 1-12.

The aim of this survey was to discover how many of the 492 graduates from 1945-1954 of the medical school in University College, Cork had chosen to enter general practice, and the numbers practicing in the Republic of Ireland, in the United Kingdom, and abroad. It was concluded from returned questionnaires that in 1964, 68 percent of the 1954 graduates were living abroad. Of general practitioners, 37 percent lived in Ireland, 54 percent in the United Kingdom, and 9 percent abroad. For specialists, the percentages were 43 percent in Ireland, 34 percent in the United Kingdom, and 23 percent abroad.
Several statistical tables.

75. Southwick, T. P. Brain drain: Fewer scientists enter U.S., more seek to leave. *Science*, vol. 169, August 7, 1970, pp. 565-66.

Migration statistics and changes in immigration laws in the United States are reviewed. It is stated that there are signs that the outflow of scientists, engineers, and physicians, both foreign- and U.S.-born, is increasing. The main reasons for this are improvement of foreign scientific facilities, deterioration of conditions in the United States, and desire to raise children in the home country.

76. Villarreal, R. and Buno, W. (*The problem of physician emigration from Latin America abroad.*) V Conferencia de Facultades de Medicina de Latino America. Lima: Universidad Nacional Mayor de San Marcos, 1967, pp. 127-61. (Spanish).

In his speech, Dr. Villarreal gives a short analysis of the magnitude and reasons for migration of Latin American physicians based on the PAHO study on migration (see entry no. 151). His presentation is followed by a round-table discussion. Dr. Buno examines the quality and quantity of physician migration in Latin America, the reasons for it, and possible intervention tactics. His speech is also followed by a round-table discussion.

77. Whitfield, A. G., Howarth, F. H., Farr, R. F., and Roberts, A. W. Radiological training and staffing in the Birmingham region and elsewhere. *British Medical Journal*, vol. 2, May 29, 1971, pp. 514-15.

Data on the migration of radiologists from Great Britain are presented. The overall loss is 25 percent, while 10 out of 52 who received radiological training in Birmingham have emigrated.

78. Whittaker, S. Medical emigration. *Advancement of Science*, vol. 25, March 1969, pp. 321-25.

A member of the interviewing team sent to the United States by the British Ministry of Health discusses his impressions of the British migration picture and the outcome of interviews with British residents in the United States.

79. Schlogell, R. (Will the EEC cause a large migration among physicians?) *Nordiska Medicin*, vol. 87, May 1972, pp. 155-56. (Danish).

Rolf Schlogell, Secretary General of "Sygekasselaekern," an organization of physicians working under the health insurance system in the Federal Republic of Germany, is interviewed. He personally does not believe that during the first five to seven years of the agreement permitting the free movement of physicians within the EEC there will be any major migratory movement.

80. Ash, R. and Mitchell, H. D. Doctor migration, 1962-64. *British Medical Journal*, vol. 1, March 2, 1968, pp. 569-72.

The numbers of provisionally or fully registered doctors entering or leaving Great Britain during the three years ending September 1965 are estimated. Methods to obtain such information in the future are explained. Details are given for all doctors, whether born in the United Kingdom, the Irish Republic, or overseas, and the countries to or from which they migrated. There is generally a close relationship between the country of birth and the country of return.

81. Bruinsma, J. H. A study of the movement and location of U.W.I. medical graduates, classes 1954-1965. *West Indian Medical Journal*, vol. 19, June 1970, pp. 91-93.

Of all medical graduates originating in the West Indies, 20.5 percent have migrated to developed countries, and 79.2 percent of all graduates were located within the region of the West Indies. Trinidad, Barbados, Guyana, and the small territories all had a negative migration balance, whereas Jamaica's was positive, mainly due to immigration from the other West Indies islands. The presence of the University of the West Indies in Jamaica is one factor influencing the flow.

82. Bui-Dang-Ha Doan, J. (The international migration of French doctors) *Concours Medical*, no. 21, 1972, pp. 4212-18. (French).

The immigration of doctors with foreign citizenship and foreign diplomas is numerically insignificant in France. Only 6.5 to 8 percent of the French medical body is of foreign origin, and immigration has been declining for the last four decades. Medical emigration of young French graduates is clearly more important than the emigration of already established professionals, although total emigration from France seems smaller than from other European countries. Less than 500 French medical school graduates have settled in the United States since the Second World War.

83. Butter, I. *International brain drain of physicians*. Ann Arbor, Michigan: University of Michigan School of Public Health, June 1971. (Available from University Microfilms Incorporated.)

This is the final report of a two-part study financed by a grant from the U.S. Public Health Service. Part I is a study of the training, utilization, and migration of FMGs in the United States and has been reported on in other papers by the author. Part II contains results of a questionnaire survey of 130 nations on the migration of physicians. Only 40 countries returned questionnaires. Tables of data are presented which show net gain or loss of doctors through migration, doctor/population ratios, number of new graduates, and the level of human resource development. Generally, the data support the hypothesis that doctors migrate primarily towards more developed countries.
Several statistical tables.

84. Butter, I. The migratory flow of doctors to and from the United States. *Medical Care*, vol. 9, January-February 1971, pp. 17-31.

A computer matching procedure was used to compare the entire FMG population in the 1966 AMA records to the entire FMG population of 1968. The estimated minimum medical brain gain was approximately 9,000 for the two years, or approximately 7,500 if U.S. nationals educated abroad were excluded. The ratio of inflow to outflow was 4:1. Visa information shows that 50 percent of the immigrants had the option of permanent stay in the United States. Data on country of medical education combined with citizenship information indicate migration patterns and suggest that many FMGs migrate several times.

85. Council on International Educational and Cultural Affairs. *The international migration of talent and skills – Proceedings of a workshop and conference*. Washington, D.C.: U.S. Department of State, 1966.

Subjects discussed during this workshop and conference include: data and information sources, definitions of "foreign students," "migrants," and "non-return," proper focus and locales of migration study, approaches toward migration, and attitudes of researchers. The differing viewpoints on research and policy connected with "brain drain" are also presented. 165 p.

86. National Institutes of Health. *The foreign medical graduate: A bibliography*. DHEW Publication No. (NIH) 73-440. Washington, D.C.: Government Printing Office, 1972.

Foreign medical graduates in the United States are the focus of this bibliography. Citations deal with education of FMGs abroad, the flow of FMGs to the United States, and their training and utilization in this country.
107 p.

87. Lockett, B. A. and Williams, K. N. *Foreign medical graduates and physician manpower in the United States*. DHEW Publication No. (HRA) 74-30. Washington, D.C.: Government Printing Office, 1974.

The political, economic, and health care implications of the large influx of FMGs to the United States are discussed, and the role of FMGs as a component of U.S. physician manpower supply is described. Action alternatives at the national level on FMG issues in relation to quality, accessibility, and cost of health care are presented for consideration.
110 p.

88. Gish, O. *Doctor migration and world health: The impact of the international demand for doctors on health services in developing countries*. Occasional Papers on Social Administration, no. 43. London: G. Bell, 1971.

Material previously published from the author's analyses of international medical migration in Great Britain is reviewed in the first section of this study. The remainder deals with health care systems in individual developing countries and the impact of medical migration on them.
Several statistical tables and over 30 references. 151 p.

89. Gish, O. Graduates of British and Irish medical schools in the United States. *Social Science and Medicine*, vol. 4, 1970, pp. 407-10.

In a review of available AMA data, Irish doctors are found to be younger than either British or U.S. graduates. The loss of Irish graduates to the United States is said to be one of the factors contributing to medical manpower shortages in Great Britain. The vast majority of British and Irish graduates are in the United States to stay. They are more heavily represented in teaching and research than are U.S. graduates.

90. Gish, O. Overseas-born doctor migration, 1962-1966. *British Journal of Medical Education*, vol. 5, June 1971, pp. 92-109.

Medical graduates born outside the British Isles who were in Great Britain between September 30, 1962 and September 10, 1966, were classified by country of birth and country of qualification, age, occupation, year of entry, number of years spent in Great Britain, and country of emigration. A close correlation was found between the number of British doctors emigrating and the increase in the number of FMGs in the country. The annual net loss of physicians was almost 400 British Isles-born graduates per year.
Several statistical tables.

91. Gish, O. and de Maar, J. A. Graduates of British and Irish medical schools taking state board examinations in America. *British Journal of Medical Education*, vol. 3, 1969, pp. 221-24.

The number of British and Irish medical graduates taking State board examinations in the United States is rising. The increase is particularly notable among the Irish. Scottish graduates take more examinations than English, while graduates of provincial medical schools take less examinations than graduates of London/Oxbridge. There is a striking difference in pass/fail ratios between English and Welsh graduates and between Scottish and Irish.

92. Ilnitsky, A. P. and Nazarov, P. M. The migration of doctors from developing countries. *Zdravookhraneniye Rossiiskoi Federatzii*, vol. 14, 1971, pp. 37-40.

The migration of physicians from developing countries to capitalist countries is the focus of this article. The reasons for the severe shortage of qualified medical personnel in developing countries are explored. Migration is said to be one of them. Latin America is described as the region losing the most doctors to the United States. This is attributed to geographical proximity to the United States, political instability, and the belief that U.S. specialists inspect and control Latin American medical programs, gearing them to the needs of the United States. The United States is said to have saved $60 million in the construction of medical schools and $15 million in their support by importing physicians.

93. North, K. A. K. Immigration and emigration of New Zealand doctors. *New Zealand Medical Journal*, vol. 72, August 1970, pp. 89-92.

The changes in immigration and emigration of doctors in New Zealand since 1943 are studied. It is concluded that permanent emigration of New Zealand graduates has increased to at least one-third of the graduates. The proportion of immigrants to New Zealand who re-emigrate has also risen, with less than one-half remaining in New Zealand for more than five years.

94. Organization for Economic Co-operation and Development (OECD). *International migration of manpower: Bibliography*. Paris, 1969.

The movement of unskilled migrant workers between European countries is the primary concern of this bibliography. The most important works on migration of high-level manpower are included.
138 p.

95. Pan American Health Organization, Advisory Committee on Medical Research. *Migration of Latin American physicians to the United States*. PAHO, Res 5/10/A, May 1969.

The history of the migration of Latin American physicians to the United States is first reviewed briefly. Immigration to the United States was uncommon before 1950, but has since progressively increased. The magnitude, causes, and effects of migration are studied. Available data on the following are examined: country and school of immigrants, location in the United States, status of citizenship, professional activities and specialties, research trainees, interns and residents, and Latin Americans in U.S. medical schools. The biggest donors are Cuba, Mexico, Argentina, the Dominican Republic, Colombia, and Peru.
21 p.

96. Powles, W. E., Gysbertsen, J. B., and Robertson, J. F. Migration of Canadian physicians to psychiatry in the U.S. – Part I: Dimensions and costs of the net brain drain. *Canadian Psychiatric Association Journal*, vol. 17, February 1972, pp. 59-64.

The following are examined: numbers of Canadian psychiatrists who have settled in the United States, numbers who have come to Canada from other countries, and net benefit or loss to Canada. It is estimated that 550 Canadian psychiatrists were working in the United States in 1969. On the other hand, 444 of Canada's psychiatrists were immigrants (only five from the United States). Thus the estimated net loss is about 100 psychiatrists, which in monetary terms equals $3,000,000.

97. Rifka, G. E. and Khoury, Y. A study of medical manpower in Lebanon. *Lebanese Medical Journal*, vol. 22, 1969, pp. 435-46.

Medical manpower in Lebanon is described by distribution, nationality, age and sex, year and school of graduation, and specialty. In 1967, approximately 110 out of 1,649 physicians were abroad. Approximately one-third of all practicing physicians graduated abroad.

98. Royal Commission on Health Services. Canada, vol. 1, 1964, pp. 241-45.

The migration of physicians into and out of Canada is reviewed. It is noted that between 1950 and 1960 the percentage of FMGs who were new registrants rose from 24.8 to 60.4 percent of Canadian medical graduates. The majority of FMGs came from the United Kingdom.

99. Stevens, R. A. and Vermeulen, J. *Foreign-trained physicians and American medicine*. DHEW Publication No. (NIH) 73-325, June 1972.

Available data on the location, activity, and function of foreign educated physicians in the United States are examined, and the political, economic, and organizational factors which have led to the current manpower situation are reviewed. The two examinations available for physicians, i.e., the examination administered by the ECFMG for graduates of foreign medical schools, and the examination drawn up by the National Board of Medical Examiners for U.S. graduates, are discussed in relation to licensure requirements. U.S. Government policies toward international educational exchange and immigration and the effects of these policies are examined historically. Recommendations are made for areas in which action should be taken, including establishment of an integrated and recognized policy toward the immigration and education of FMGs and collection of more reliable data on the characteristics, expectations, and roles of FMGs.
184 p.

100. Torrey, E. F. American medicine is robbing poor nations. *Pharos*, July 1968, pp. 108-10 and 113.

Figures of medical migration to the United States are reviewed. United States immigration policies regarding physician migration are criticized and some solutions suggested.

101. Torrey, E. F. and Taylor, R. L. Cheap labor from poor nations. *American Journal of Psychiatry*, vol. 130, April 1973, pp. 428-34.

Importation of large numbers of FMGs to staff U.S. mental hospitals is considered one of the most serious problems facing U.S. psychiatry. The magnitude of the problem, the utilization of these M.D.s as "cheap labor," the quality of care provided, and the effects of this migration on the home country are reviewed. Causes and possible solutions are also discussed.

102. Tsyn, A. M. (Problem of migration of physicians.) *Sovetskoye Zdravookhraneniye*, vol. 29, 1970, pp. 61-63. (Russian).

The medical migration into the United States and Canada is seen as a serious problem for developing countries, and is contrasted with the stated non-existence of brain drain into the U.S.S.R. The Soviet Union is assisting many developing countries in establishing and strengthening their national public health programs.

103. Usher, R. E. *The impact of foreign medical personnel in the United States.* A report prepared for the Foreign Service Institute. Washington, D.C.: U.S. Department of State, 1969.

In this case study presented during the Eleventh Session of the Senator Seminar in Foreign Policy, the reasons for the large number of FMGs in the United States are first examined. Their impact on both the U.S. medical system and the donor countries is considered. It is predicted that the flow of foreign physicians will continue for two or three decades. Recommendations are made for compensating the sending countries by greatly intensifying U.S. efforts to improve the health environment in these countries.

104. West, K. M. Physician brain drain. *Medical Opinion and Review*, vol. 4, September 1968, pp. 36-45.

Physician migration is discussed both in terms of gains to the recipient countries and losses sustained by donor countries. Countries are identified as recipients and donors of physicians.

D. REPATRIATION

See entries 25, 27, 36, 48, 51, 61, 64, 85, 86, and 87.

II. NURSE MIGRATION

105. Gish, O. Nursing and midwifery migration in Britain. *Nursing Times*, May 1, 1969, pp. 69-71. {supplement}.

The recruitment of non-British nurses and return rates of overseas midwives are first studied. Only 24 to 27 percent of the midwives were found to have returned home three to eight years after completion of training in Britain. Contribution of these nurses and midwives to British nursing is discussed. British nursing emigration is calculated to be in the order of 2,000 to 3,000 a year.

106. Kendall, M. Overseas nursing students in Britain. *International Nursing Review*, vol. 19, 1972, pp. 246-40. (An excerpt appears in *New Sorietv*, August 3, 1972, pp. 239-40.)

Britain is having difficulty in attracting young people to the nursing profession and has come to rely largely on overseas nursing students. The dimensions of this migration are presented together with a brief economic, educational, and health status report of Barbados, Jamaica, Mauritius, and Malaysia, which are the major donor countries. The need for further research is emphasized.

107. Mead, B. P. Nursing down under. *Nursing Mirror*, vol. 130, February 6, 1970, pp. 39-41.

A British nurse describes registration procedures and working conditions in hospitals in Australia.

108. Committee on Facts and Figures on Nursing. *Facts and Figures on Nursing*, Philippine Nurse Association, Manila, 1972.

Nursing manpower in the Philippines is reviewed and the migration problem is discussed. In 1970, approximately 35 percent of nurses were abroad. Thirty percent of those who went overseas under an exchange visitor program from 1956-1972 stayed abroad.

109. Weiss, O. Problems of peripatetic professionals. *International Nursing Review*, vol. 17, 1970, pp. 77-83.

The Nursing Unit of Israel's Ministry of Health in 1967 processed the papers of 400 foreign nurses who desired to work in Israel. The problems encountered by these nurses included language, determination of status, and registration.

110. Wintzer, H. (Korean nurses being prepared in their country for service in German hospitals) *Krankenhaus*, vol. 63, 1971, pp. 426-29. (German).

The German nursing shortage is reviewed, and the so called "Korea program" explained. This is an agreement between Korea and the Federal Republic of Germany that allows for the selection of up to 4,500 licensed nurses and 11,000 licensed hospital attendants from Korea to work in West German hospitals from 1971 to 1974.

See entries 16, 44, 45, and 61.

III. MULTI-PROFESSIONAL MIGRATION

A. PHYSICIAN AND OTHER PROFESSIONAL MANPOWER

111. Abraham, P. M. An outline for a study of brain drain from India. *Manpower Journal*, vol. 3, October-December 1967, pp. 1-44.

Key concepts important to any discussion of the brain drain, including purpose of going abroad, return rates, and duration of stay, are examined. The type of data required for assessing the extent of brain drain from India is indicated. Over 30 references.

112. Avakov, R. The status of research workers. In *Training of research workers in the medical sciences. Proceedings of a round table conference.* Geneva: World Health Organization, 1972, pp. 44-50.

The role of the professional researcher in scientific and technical development and the "brain drain" are examined. (See also entry no. 137.)

113. Awasthi, S. S. P. Brain drain from developing countries: An exercise in problem formulation. *Manpower Journal*, vol. 2, April-June 1966, pp. 80-98.

The object of this paper was to develop a suitable frame of reference in order to formulate rationally for study the problem of migration. Aspects of migration such as non-returning students, quality of migration, and duration of stay were discussed.

114. Baldwin, G. B. Brain drain or overflow? *Foreign Affairs*, vol. 48, January 1970, pp. 358-72.

Migration statistics were examined with special reference to East and Southeast Asia, India, East Africa, the Middle East, and Latin America. It is concluded that "we can afford to be relatively relaxed about migration, but not to be complacent about its causes." Views of the United Nations and the United States Government are discussed.

115. Culand, H. (The brain exodus) *Schweizerisch Monatsschrift Zahnheilkunde*, vol. 78, 1968, pp. 895-97. (French).

After a review of background information on the magnitude and causes of the international brain drain, two points of view are presented: the "international trend" viewing migration as a long-term gain for donor countries, and the "nationalist trend" perceiving it as a cause of underdevelopment of donor countries.

116. Dedijer, S. Migration of scientists: A worldwide phenomenon and problem. *Nature* (London), vol. 201, March 7, 1964, pp. 964-67.

The generalization that the United States is the only big recipient country of highly skilled manpower is judged inaccurate. Developing countries are criticized for their lack of effort in contacting and utilizing their emigrant scientists.

117. Education and World Affairs, the Committee on the International Migration of Talent. *The international migration of high-level manpower; its impact on the development process.* Praeger special studies in international economics and development. New York: Praeger, 1970.

This series of monographs on various regions of the world and their brain drain contains sections on physician migration included in the chapters on the Philippines, India, Lebanon, Turkey, Latin America, the Netherlands, France, and the United Kingdom.
Several statistical tables and over 30 references. 738 p. (See also entry no. 118.)

118. Education and World Affairs, the Committee on the International Migration of Talent. *Modernization and migration of talent*. New York: Education and World Affairs, 1970.

This concluding chapter of "The international migration of high-level manpower" reviews the nature and causes of talent migration and makes recommendations. A separate section on physicians is included.
88 p. (See entry no. 117.)

119. Education and World Affairs, the Committee on International Migration of Talent. *Selected publications and research related to the international migration of professional manpower*. Washington, D.C., January 1968.

This is a compilation of ongoing research projects on migration of professional manpower and a selected bibliography.
32 p.

120. Francon, F. (Against the American brain drain) *Journal de Medecine de Lyon*, vol. 49, 1968, pp. 1303-07. (French).

The history of migration between the United States and France is briefly reviewed, followed by a criticism of the United States recruitment of scientists abroad. It is pointed out that the brain drain from France is currently declining. Causes for physician migration are discussed in a separate chapter.

121. Gonzalez, G. R. The migration of Latin American high-level manpower. *International Labour Review*, vol. 98, 1968, pp. 551-69.

An over-all view of the Latin American brain drain is given. The possible or chosen intervention strategies are evaluated and areas for new research are pointed out. A case study of Colombia is included.

122. Grubel, H. G. The brain drain: A U.S. dilemma. *Science*, vol. 154, December 16, 1966, pp. 1420-24.

The nature and extent of the brain drain to the United States are analyzed. The effect on the quality of life in the home country is studied and it is suggested that this is not reduced; in fact, migration may exert some positive influence on it. Relevant statistics are reviewed and some recommendations to stem the brain drain are made.

123. Halpern, B. M. New exodus: Israel's talent drain. *The Nation*, vol. 200, May 10, 1965, pp. 497-99.

Every year, approximately 12,000 Israeli passport holders do not return to Israel. The decline of idealism in the society is seen as the real cause for emigration. The government is discussing a law that would oblige Israeli trained doctors to serve for at least three years in a newly developing area before finally being certified. Approximately 20 percent of the almost 1,000 Israeli medical graduates since statehood have departed to the United States for specialty training.

124. Henderson, G. Foreign students: Exchange or immigration? *International Development Review*, vol. 6, 1964, pp. 19-21.

This report reviews the statistics on non-returning students, comments on physician and scientist migration, and suggests ways to change the flow.

125. Hermet, G. (*The Brain Exodus*) Notes et Etudes Documentaires, no. 3598. Secretariat General du Gouvernement, France. (French).

Analyses are made of migration of high-level manpower in the United States, Great Britain, and Canada, and the situation in the donor regions of Asia, Africa, Latin America, and Europe is examined. The case of France is presented in detailed fashion with a special chapter on foreign physicians. Patterns and reasons for migration and possible intervention methods are discussed.
Several statistical tables and a bibliography. 76 p.

126. Houssay, B. A. (Emigration of scientists and technicians from Argentina) *Prensa Medica Mexicana*, vol. 33, 1968, pp. 362-69. (Spanish).

A short history of migration to and from Argentina is presented. The dimensions and reasons for the recent high-level migration, as well as the difficulties of returning migrants, are discussed. Suggestions are made to prevent and correct emigration.

127. Institute of Applied Manpower Research, New Delhi. *Migration of Indian engineers, scientists, and physicians to the United States.* New Delhi, 1968.

This study of Indian engineers, scientists, and physicians admitted to the United States as immigrants from 1954 to 1966 reviews U.S. immigration laws and analyzes migrants by occupational categories, country of birth, sex, and selected age groups.
Several statistical tables. 87 p.

128. Lynn, R. *The Irish brain drain.* The Economic and Social Research Institute, paper no. 43, Dublin, 1968.

Reports are given of two independent surveys, both of which suggested that about 80 percent of Irish students intend to find employment abroad. The majority surveyed envisaged emigrating for three to five years and then hoped to return home. Fifty percent of the 1952 medical graduates of the University College in Dublin were working abroad in 1968. It is argued that Irish universities are orientating students toward employment abroad. Since the number of professional jobs is roughly constant, it is deemed desirable to encourage more students toward business careers.
20 p.

129. Mills, T. J. Scientific personnel and the professions. *Annals of the American Academy of Political and Social Science*, vol. 367, September 1966, pp. 33-42.

The numbers of scientists, engineers, and physicians emigrating to the United States are increasing. They now constitute a appreciable percentage of the annual increment to these professions. Their foreign origins include Europe, particularly the United Kingdom and Germany, Canada, and Asia. Viewed in terms of educational attainment, membership in the National Academy of Sciences, and nubers of Nobel laureates, the foreign-born compare very favorably with native born.

130. National Science Foundation. Immigrant scientists, engineers, and physicians increase in FY 1970. *Science Resource Studies*. Washington, D.C.: National Science Foundation, no. 71-11, April 1971.

Data on the increasing numbers of foreign medical graduates in the United States are presented.
Several statistical tables.

131. National Science Foundation. *Scientists, engineers, and physicians from abroad, fiscal years 1966 and 1967.* Washington, D.C.: National Science Foundation, no. 69-10, 1969.

The extent and characteristics, including occupation, country of birth and permanent residence, age, sex, and State of intended residence, of immigrant scientists, engineers, and physicians are examined.
Several statistical tables.

132. National Science Foundation. *Scientists, engineers, and physicians from abroad; trends through fiscal year 1970.* Washington, D.C.: U.S Government Printing Office, NS 1.22: SCI 2/2/970, 1972.

Part I covers trends from 1949 to 1970 in admission of scientists, engineers, and physicians to the United States as immigrants, and elaborates on the results of the 1965 revisions in the immigration law. Part II presents information on "non-immigrants." Part III is concerned with educational exchange, and Part IV shows data on characteristics of foreign-born scientists in the 1970 U.S. National Register of Scientific and Technical Personnel.
Several statistical tables. 44 p.

133. National Science Foundation, Office of Economic and Manpower Studies. *Reviews of Data on Science Resources*, no. 18, November 1969, pp. 1-19.

The following data are reviewed: migration trends from 1958 to 1968, country or region of birth, country of last permanent residence, migration patterns, aliens adjusted to immigrant status, age, sex, and State of intended residence of immigrants.
Several statistical tables.

134. Pankhurst, K. V. Migration between Canada and the United States. *Annals of the American Academy of Political and Social Science*, vol. 367, September 1966, pp. 53-63.

New estimates about movements of the labor force between Canada and the United States are presented. They indicate that migration is larger than previously thought. This increasing interchange is important among professional and skilled workers. The tendency of the more highly trained to remain in the United States seems to be diminishing. The explanation of this migratory movement seems to be the emergence of an international labor market, especially among the more highly trained.

135. Research Policy Program. *Brain drain and brain gain: A bibliography on migration of scientists, engineers, and doctors.* Research Policy Program. Lund, Sweden: University of Lund, 1967.

This bibliography includes 415 citations from 40 countries and regions of the world.
48 p.

136. Sen, A.K. A quantitative study of the flow of trained personnel from the developing countries to the United States. *Journal of Development Planning*, vol. 3, 1971, pp. 105-39.

Several hypotheses of causes for migration are tested in this cross-country study. It is concluded that the intercountry movement does not seem to have any significant relation to the difference in per capita income between the United States and the country of origin, nor to the travel costs to the United States. The best explanation for physician migration involves a direct correlation between the numbers of students graduating in the home country and students doing graduate studies in the United States.
Several statistical tables and over 30 references.

137. Situation in some developed and developing countries; interchange and emigration of scientists ("brain drain"). In *Training of research workers in the medical sciences. Preceedings of a round-table conference.* Geneva: World Health Organization, 1972, pp. 90-145.

Papers on the following subjects are presented: migration of medical scientists and physicians(C.Kidd, pp. 90-96); results of an OECD survey (D. Salomon, pp. 97-102); situation in some developing countries, with special reference to Africa (O. O. Akinkugbe, pp. 103-05); situation in Canada (G. M. Brown, pp. 106-08); medical research in France (C. Burg, pp. 109–10); training in social medicine (J. Kostrzewski, pp. 111-15); development of graduate education in Thailand (W. Lathem, pp. 116-20); training of research workers, with special reference to developing countries and to the "brain drain" (B. Lush, pp. 121-26); and bilateral cooperation (P. O. Williams, pp. 127-31).
A transcription of a discussion follows.

138. Thomas, B. *Migration and economic growth*. 2nd ed. London: Cambridge University Press, 1972, pp. 306-29.

The rhythm of economic growth and migration from the 19th century to the present day is examined. Results of a survey of the international circulation of professional manpower between 1950 and 1970 are reported. The concept of dynamic shortage is used to explain the phenomenon of brain drain. It is felt that the key explanatory variable related to migration is Federal expenditure on research and development in the United States. A separate section on physician migration to and from the United Kingdom is included.
Several statistical tables and over 30 references.

B. PHYSICIANS, NURSES, AND OTHER PROFESSIONAL MANPOWER

139. Adams, W. Talent that won't stay put. *Population Bulletin*, vol. 25, June 1969, pp. 59-87.

Four aspects of the brain drain are examined: 1) its scope and nature, 2) its causes, 3) its consequences, and 4) steps which should be taken to deal with it. It is stated that the brain drain accounts for only 11 or 12 percent of all immigration to the United States, and that the industrialized countries still contribute the largest share of this flow of talent. The most important causes are salary differentials, political reasons, failure to employ talent, limited research opportunities, and professional shortages in the recipient country.

140. Bechhofer, F., ed. *Population growth and the brain drain. Edinburgh Conference on Demography*. Edinburgh: University Press, 1969, pp. 1-71.

The 1967 Edinburgh Conference on Demography began with a discussion of migration and the brain drain. Beijer's paper viewed the brain drain as a burden, a stimulus, and a challenge to European integration. J.M. Last examined international mobility in the medical profession and noted that potential surgeons were more likely to emigrate, potential general practitioners least likely, and that in Britain the emigrating doctors probably were less academically distinguished. A.Saury discussed the economic and political consequences of selective migration from one country to another.
Several statistical tables and over 30 references.

141. The 'brain drain' problem in the Philippines. *Journal of Philippine Statistics*, vol. 18, April-June 1967, pp. vii-xii.

The United States immigration laws and their effect on Philippine migration are reviewed. Ways to improve the gathering of statistics are pointed out.
Several statistical tables.

142. Fortney, J. Immigrant professionals: A brief historical survey. *The International Migration Review*, vol. 6, Spring 1972, pp. 50-62.

Overall data on migrants and selected individual migrants (named) are reviewed from pre- 1930 to the present day. Their contribution to U.S. science is acknowledged.

143. Fortney, J.A. International migration of professionals. *Population Studies*, vol. 24, 1970, pp. 217-32.

Data on the extent of professional migration into the United States are examined. The reasons for migration are reviewed and the impact on U.S. science and medicine and on the donor country are discussed. Effects on the receiving country are almost entirely beneficial; effects on the country of origin are harder to evaluate. Though short-run consequences may be beneficial, in the long-run extensive migration may have adverse effects on economic development.
Several statistical tables.

144. Giorgi, L. Extent, nature, and causes of the loss of scientists and engineers in Latin America through migration to more advanced countries. In *Guidelines for the application of science and technology to Latin American development.* Unesco/CASTALA/2.2.9. 1965, pp. 172-88.

This is a working paper for a Unesco conference on the application of science and technology to the development of Latin America. The magnitude of migration and its causes are reviewed, and suggestions for preventing emigration are made.

145. Gupta, M. L. Outflow of high-level manpower from the Philippines, with special reference to the period 1965-1971. *International Labour Review*, vol. 107, February 1973, pp. 167-91.

The magnitude of the outflow of high-level manpower is first calculated. It is found that apart from the United States, Canada, and Australia, there are hardly any other countries to which Filipinos emigrate. The causes, costs, and benefits of the brain drain are reviewed. Intervention measures are proposed.
Several statistical tables.

146. Gutierrez Olivos, S. and Riquelme Perez, J. *The emigration of high-level manpower: The case of Chile.* Washington, D.C.: Pan American Union (Organization of American States), 1966.

A speech on migration by the Chilean Ambassador to the United States prefaces this monograph, which is a report of a survey of Chilean professional personnel residing in the United States. Information is presented on previous studies, present activities, salaries, motivation for migrating, and future plans. In conclusion recommendations are made in the fields of manpower planning, information service, incentives policy, Inter-American action, and further inventory of Chilean emigrants.
Several statistical tables. 57 p.

147. Halevi, H. S. (Immigration of health professions during 1970) *Harefuah*, vol. 80, June 15, 1971, pp. 656-59. (Hebrew with an English summary).

In 1970, there were 636 doctors, 273 nurses and midwives, and 330 other health professionals who immigrated to Israel. One out of every 30 immigrants was a member of a health profession. Presently there are no data on the absorption of these immigrants.

148. Henderson, G. *The emigration of highly skilled manpower from the developing countries.* New York: United Nations Institute for Training and Research, Research Report No. 3, 1970.

This UNITAR research report begins by exploring the components and statistics of professional migration. National differences in the migration picture are emphasized. Educational, economic, and social factors affecting outflow are examined. The advantages and disadvantages and current intervention measures are studied. The presentation ends with recommendations for future strategy.
Several statistical tables and over 30 references. 213 p.

149. Institute of Applied Manpower Research, New Delhi. *The "brain drain" study; phase I: Analysis of ordinary passports issued during 1960-1967.* New Delhi, 1970.

A study was made of passports issued to Indians with specified educational qualifications. This report presents the distribution by regional passport offices and by purpose of visit abroad. A separate chapter on physicians is included.
Several statistical tables. 57 p.

150. Naraghi, E. (The third world becomes empty) *Jeune Afrique*, vol. 356, November 5, 1967, pp. 28-32. (Also appears in *Politique Etrangere*, vol. 32, July 1967, pp. 269-79). (Both French).

The magnitude of migration from developing countries to the United States is reviewed. Besides job opportunities, better salaries, and the 1965 change in immigration laws, underlying educational and political reasons for migration are also important. Highly specialized people are unwilling to live in rural areas. There are too many lawyers and physicians in developing countries while specialists in other fields are lacking. Research opportunities are poor and there is no collaboration between industry and the university. The United Nations is urged to re-examine the way technical assistance is given.

151. Pan American Health Organization, Subcommittee on Migration. *Migration of health personnel, scientists, and engineers from Latin America*. Washington, D.C.: PAHO Scientific Publication No. 142, 1966.

This monograph presents data on the numbers and characteristics of migration from and to Latin America. An analysis is made of reasons for migration, and various intervention strategies are recommended to Latin American countries, the United States, and international organizations. Physicians are analyzed separately.
Several statistical tables and over 30 references. 118 p.

152. Parthasarathi, A. India's "brain drain" and international norms. *International Educational and Cultural Exchange*, Summer 1967, pp. 4-12.

The numbers and quality of Indian emigrants and the government initiatives to retain and bring them back are reviewed. It is felt that if the brain drain from India is to be reduced, there must be a complete reorientation and restructuring of Indian higher education, coupled with a sensible manpower policy.

153. Ramaswamy, N. S. and Shah, R. *Study of the outflow: Mechanics, consequences for developing and developed countries. An international policy to influence net outflow of trained personnel from developing countries.* United Nations Publication ESA/SAT/AC.3/4, October 24, 1973.

This is the report of a United Nations Group of Experts on the Outflow of Trained Personnel from Developing to Developed Countries. The purpose of this study is to examine various policies which have contributed to the international migration of trained people. It begins with a brief review of previous studies and discusses the dimensions and patterns of this migration and its future trends. Reasons for brain drain are examined in political and economic arenas and educational, social, legal, and professional fields. Consequences for developing and developed societies are discussed extensively. A case study of migration from India is included. The report concludes with policy directives to developing and developed countries and international organizations for controlling the outflow of trained personnel.
60 p.

154. Taylor, C. E., Dirican R., and Deuschle, K. W. *Health manpower planning in Turkey: An international research case study.* Baltimore, Maryland: The Johns Hopkins Press, 1968.

The supply of and demand for health manpower in Turkey are studied. Imbalances, educational trends, and economic factors controlling the expansion of health services are analyzed. One-fifth of Turkish doctors were found to be abroad. Several statistical tables. 300 p.

155. Thomas, B. International movements of highly trained manpower. *International Population Conference London, 1969.* Liege: The International Union for the Scientific Study of Population, 1971, vol. 4, pp. 2711-33.

The limitations of data on migration and patterns of international migration flow are discussed, followed by a study of migration to Canada and the United States. The concept of "dynamic shortage" as an emigration fostering factor is presented.

156. United Nations Economic and Social Council. *Outflow of trained personnel from developing to developed countries: Report of the Secretary-General.* E/C.8/21, January 18, 1974.

This document is based on three items: a report on the brain drain submitted to the Secretary-General by a group of experts, material prepared by special consultants, and consultations of the Secretary-General with United Nations bodies involved in this problem. The report discusses characteristics, causes, mechanisms, and consequences of the migration from developing to developed countries. Four groups of migrants, namely health personnel, engineers, scientists, and students, are treated individually. The final section of the report presents guidelines for developed and developing countries when considering policies related to the brain drain. Measures are suggested which can be taken by the United Nations and other international organizations to affect the flow of trained personnel.
26 p. and annex.

157. United Nations Economic and Social Council. *Outflow of trained personnel from developing to developed countries. Second Report of the UN Secretary-General to the Economic and Social Council.* 45th Session, Agenda Items 9 and 10, 1968, pp. 14-18 and 30-31.

The presently ongoing migration studies undertaken by UNITAR, ILO, and WHO are reviewed. Steps taken by the different United Nations agencies to assure the return of their fellowship holders are explained, and long-term programs and interagency coordination are suggested.

158. United Nations Economic and Social Council, Committee on Science and Technology for Development, Second Session. *Provisional summary report of the forty-fifth meeting.* E/C.8/SR.45, March 27, 1974. 16 p.
Adoption of the report of the committee on science and technology for development. E/C.8/L.45/Add.4, March 27, 1974. 5 p.

The first document cited contains the minutes of a meeting of the Committee on Science and Technology for Development, during which the Report of the Secretary-General was discussed. Delegations from approximately one-third of the member countries of the Committee participated in the discussion. The Adoption of the Report of the Committee contains a draft resolution which urges that developing countries undertake national evaluations of the

problem of the outflow of trained personnel to developed countries. In addition, the resolution recommends that countries which benefit from the brain drain consider ways to help reduce the flow of personnel. It also makes recommendations on data collection by Member States and U.N. bodies. (Relevant to first document cited, see entry no. 157.)

159. United Nations, General Assembly. *Outflow of trained personnel from developing countries: Report of the Secretary-General*, (A/7294), November 1968. (An excerpt appears in *Development Digest*, April 1968, pp. 55-57.)

This report is based on the preliminary UNITAR study on the outflow of both high-level and middle-level personnel from developing countries.
Several statistical tables. 85 p.

160. United Nations Institute for Training and Research (UNITAR). *The brain drain from five developing countries – Cameroon, Colombia, Lebanon, the Philippines, Trinidad, and Tobago*. New York: UNITAR Research Report no. 5, 1971. 173 p. (Also appears as *Report of the Secretary-General, United Nations Economic and Social Council*. 49th Session, Agenda Item 9, E/4820 and E/4820 Add. 1, June 1970.)

Part one of this study is a synthesis of the five country studies dealing with the following: general patterns and causes of migration, losses in investment, training, and potential output of manpower, gains from remittances and transfer of technology, and role of the private sector. Part two presents summaries of the country studies. Part three presents recommendations for action at the national and international levels.
Several statistical tables.

161. Van der Kroef, J. M. The United States and the world's brain drain. *International Journal of Comparative Sociology*, vol. 11, September 1970, pp. 220-39.

The first section of this report provides representative data on the present extent of brain drain to the United States. The second section considers some of the reasons for this migration. The third part suggests possible intervention measures.

162. Watanabe, S. Brain drain from developing to developed countries. *International Labour Review*, vol. 99, April 1969, pp. 401-33.

The magnitude, effects, and causes of the brain drain and its possible countermeasures, described as preventive, restrictive, and restorative, are discussed. Emigration of high-level personnel on any substantial scale is seen to affect the welfare of home countries and retard their development. Effective countermeasures are deemed essential.
Several statistical tables.

See also entries 2 and 125.

C. OTHER PROFESSIONAL AND STUDENT MIGRATION

163. Education and World Affairs, Report of the Task Force on Medicine and Public Health. *The Professional School and World Affairs*. New York: Education and World Affairs, 1967, pp. 32-38. (Also appears as Part IV, Report on Medicine and Public Health, in *The Professional School and World Affairs*. New York: Education and World Affairs, 1968.)

The role of U.S. medical schools and schools of public health in overseas activities and the training of foreign students are studied.

164. Lockett, B. A., Sullentrop, F., and Williams, K. N. *Foreign medical students in the Americas: 1971-72.* DHEW Publication No. (HRA) 74-27, Washington, D.C.: Government Printing Office, 1973.

A survey was made of all member countries of the PAHO region of the WHO to acquire data on student enrollments by country of origin, sex, and year of study. This report presents survey results with particular emphasis on U.S.-born medical students in other countries of the Americas and on foreign medical students in the United States.
32 p.

165. Gish, O. Foreign-born graduates of British medical schools, 1948-1966. *British Journal of Medical Education*, vol. 5, March 1971, pp. 22-29.

The volume of foreign-born graduates as a percentage of all medical school graduates has been more than twice as high in Scotland as in London, and more than 50 percent higher in Scotland than in the provincial English schools. Over the time period, the absolute numbers of graduates born in the Old Dominions, Europe, and West Indies have halved, while those from Africa, Asia, and the Middle East have doubled. Norway alone of the developed countries has been increasing its number of graduates. Overall, 29 percent of foreign-born graduates had not as yet returned home.

166. Glaser, W. A. *The migration and return of professionals.* Bureau of Applied Social Research, Columbia University, September 1973. [unpublished].

A UNITAR multinational comparative study was made on the migration and return to developing countries of professionals who studied in developed countries. Results of 5,500 questionnaires are presented. The research seeks to identify the multitude of social, economic, and other motivations and influences that bear upon decisions to go abroad and to return home. In addition, considerable information is obtained about the conditions of life and work for such professionals in many countries. Physicians are excluded from this study.
Several statistical tables and over 30 references. 472 p.

167. Kendall, M. *Overseas students in Britain: An annotated bibliography.* London: United Kingdom Council for Overseas Student Affairs, 1968.

Citations in this bibliography include publications on both medical and nursing students.
28 p.

168. McKnight, A. *Scientists abroad: A study of the international movement of persons in science and technology*. Paris: Unesco, 1971.

The international movement of scientists, engineers, and technicians is traced, and the relationship of this travel to national development is assessed. Suggestions for both short-term and long-term solutions are made.

169. *Statistics of students abroad 1962-1968: Where they go, where they come from, what they study.* Paris: Unesco, 1972.

International trends in student exchanges are analyzed. Part one contains the analysis proper with tables that summarize world and regional trends. Part two contains statistical tables for 151 countries and territories. The students abroad are presented according to their country and field of study.
Several statistical tables. 416 p.

170. Wilson, J. A. *The depletion of national resources of human talent in the United Kingdom: A special aspect of migration.* Ph.D. dissertation. Belfast: Queen's University, 1964.

British migrant scientists in North America are examined. Physicians are not represented in the actual field investigation, however the thesis includes an extensive literature review of the dimensions and causes of migration of British-trained physicians.
Over 30 references.

See also entries 9 and 85.

FACTORS FOSTERING MIGRATION

I. GENERAL CAUSES OF MIGRATION OF PROFESSIONAL MANPOWER

171. Adams, W., ed. *The brain drain*. New York: Macmillan, 1968.

This book is a compilation of papers presented at an international conference on the brain drain. The first part defines the problem and includes an historical view of migration. Part two searches for an analytical framework, and different models for viewing the brain drain are introduced. The international model views migration postively, pointing out that generally the emigre becomes more highly skilled in a developed country and thus indirectly benefits his home country. The national model sees migration as a negative force and feels it is an important reason for the underdevelopment of donor countries. The differential push-pull model examines both immigration fostering factors in the home country and factors attracting high-level manpower in the recipient country. Part three deals with education and migration, and part four discusses case studies of France, Greece, the East European countries, Africa, and India.
273 p.

172. Carino, L. V. *Structural conditions and professional migration: A study of the movement of scientists, engineers, and medical personnel into the United States, 1965-1967.* Thesis, Bloomington, Indiana: Indiana University, Doc. no. 71-14445, 1971.

The hypothesis of this study was that certain structural properties of sending countries have served as push factors for migration. "Primary" factors were those expected to provide the initial push; "secondary" factors affected the choice of destination. Factors studied by regression analysis included nature of the scientific community, role of development, quality of education, democracy, degree of instability, distance, economic and political relationships, and cultural similarity with a developed country. Findings supported both the central hypothesis and the theory that professional migration to the United States is high only when both primary and secondary factors are strong. Some solutions to the brain drain were evaluated.
Several statistical tables and over 30 references. 284 p.

173. Chorafas, D. N. *The knowledge revolution: An analysis of the international brain market and the challenge to Europe.* London: Allen and Unwin, 1968.

The failure of European, particularly British, industry, governments, and universities to make necessary investments in research and development is strongly criticized. The brain drain is seen as a symptom of this lack of planning and innovation.
142 p.

174. Cortes, J. R. Factors associated with the migration of high-level persons from the Philippines to the U.S.A. *Science Review*, vol. 11, Jan-Feb. 1970, pp. 3-17.

The objectives of this study were to identify the major factors associated with migration, gain insights into the problem of prediction of migration among the highly trained, and study ways by which education at home and abroad may help reduce the outflow. Results show that persons educated in public schools appear to be more anchored to the Philippines, and persons who worked in the government before they left the United States returned home in greater proportion than those who worked in the private sector.
Several statistical tables.

175. Henderson, G. The use of the technologist in Asia. *Development Digest*, vol. 7, April 1969, pp. 77-82.

The increasing migration of trained manpower from Asia to the United States suggests a lack of adjustment of Asian societies to the place of modern technicians. Japan is a striking exception. Causes may be found in historical contrasts between recently feudal Japan and centralized, bureaucratic, Asian societies.

176. Johnson, H. G. Economic aspects of brain drain. *Development Digest*, vol. 7, April 1969, pp. 45-54.

An article appearing in W. Adams' book, *The Brain Drain* (entry no. 171), is reprinted here in condensed version. It is felt that the harmful effects of "brain drain" are usually exaggerated, and the benefits ignored by overly nationalistic approaches. In economic terms, migration of the educated is likely to produce world gains, while losses to particular countries could be covered by compensatory arrangements.

177. Kannappan, S. The brain drain and developing countries. *International Labour Review*, vol. 98, July 1968, pp. 1-26.

The impact of the world economy on the human capital endowment of poor countries is reviewed. Welfare losses and gains from the brain drain are discussed, and it is argued that the net balance in human skills is not unfavorable to the developing countries. Measures to increase the high-level skills of poor countries are proposed. These include wide wage differentials, imaginative recruitment policies, and changes in the educational system.

178. Oldham, C.H.G. rapporteur. *International migration of talent from and to the less developed countries*. Ditchley Park: Ditchley Foundation, 1968.

Reasons for migration and intervention strategies in the areas of education, aid, training, immigration, repatriation, and industry are discussed in this conference report.
29 p.

179. Pierre-Charles, G. *(Haitian economy and her road to development.)* Paris: G.P. Maisonneuve et Larose, 1967, pp. 205-09. (French).

The Haitian standard of living as a reasons for large migration is discussed.

180. Villamizar de Hill, L. *Factors influencing the emigration of Colombian professionals to the United States*. Thesis, Catholic University of America, Washington, D.C., 1971.

Outflow of talent is treated as a consequence of the long remaining incongruities present in the political, social, economic, and educational systems, and the lack of coordination of educational policy with national development planning. A questionnaire administered to 300 Colombian professionals inquired about conditions before their leaving the country, motivation for going to the United States, activities in the United States, and possible incentives for return to Colombia. The main factors fostering migration appear to be desire for professional advancement, better recognition of ability and performance, and higher salaries. Certain intervention strategies are proposed.
Several statistical tables and over 30 references.

See also entries 75, 115-121, 123, 125, 126, 128, 134-39, 143-146, 148, 150, 151, 153-162, 166, 170, and 305.

II. CAUSES OF PHYSICIAN MIGRATION

181. Abel-Smith, B. Health priorities in developing countries: The economist's contribution. *International Journal of Health Services*, vol. 2, 1972, pp. 5-12.

It is asserted that health should not be measured in crude economic terms. The greatest contribution which the economist can make to health planning is not in development of models but in cost-effectiveness studies. This is illustrated by an example: a study of the expansion of medical education in developing countries could identify a resultant increase in migration, and thus a reduced benefit to the countries in question. In this case resources would be better used in other health areas to benefit these countries.

182. Adieseshiah, M. S. Brain drain from the Arab world. Eighth Arab cultural conference on the training of scientific workers in the Arab world. In *It is Time to Begin*. Paris: Unesco document DDG/69/13, 1973.

This speech by the Deputy Director-General of Unesco deals with the facts and features of Arab brain drain. Statistics on Arab physicians and nurses migrating to the United States, Canada, and France are given. The causes for migration are divided into three categories: a) economic, b) structural, and c) institutional. Changes in education and science policy such as proper scholarship allocations and establishment of development and research centers, are recommended to remedy the situation. Revised immigration policies are also seen as necessary.

183. Andrew, R. Graduate training: Professional and university responsibilities. *Medical Journal of Australia*, vol. 1, January 11, 1969, pp. 66-70.

The problems of graduate training are discussed in this address to the Australian Medical Association. The increasing number of Australians going to the United States is noted with alarm.

184. Antler, L. and Halberstam, J.L. Why foreign medical residents come to the United States: The relationship between cultural and vocational factors and the decision to obtain medical training abroad. *British Journal of Medical Education*, vol. 3, March 1969, pp. 15-22.

One hundred and seventy foreign medical residents, divided by specialty and region of origin, were studied to determine their reasons for migration to the United States. There was general agreement on the superiority of U.S. medicine as the most important motivating factor, but other reasons revealed interesting regional differences.

185. Antler, L. and Zaretsky, H. National consciousness among foreign physicians in the United States: Correlates in attitude, adjustment, personality, and demographic variables. *Journal of Social Psychology*, vol. 71, April 1967, pp. 209-20.

A group of twenty-nine FMGs training in Physical Medicine and Rehabilitation were studied for national consciousness. They were divided into High and Low Affiliation groups. Comparisons between the groups were based on the Minnesota Multiphasic Personality Inventory, the Gordon Personal Profile, and indices of motivation, satisfaction, performance, and personal background. The Low Affiliators came primarily from Eastern Europe and scored significantly higher on measures of satisfaction with their stay in the United States, their U.S. training, and supervisors. They were also influenced more by economic and family reasons in the decision to come to the United States than were the High Affiliators who came primarily from the Far East and Latin America.

186. Belsasso, G. and Parres, R. Determining factors in the return of Mexican psychiatrists trained in the United States. *American Journal of Psychiatry*, vol. 127, June 1971, pp. 1694-96.

Factors contributing to the return of Mexican psychiatrists trained in the United States and Canada are discussed. These include a clear identity with the native culture, a certain degree of security and idealism, and an initially well defined motivation to return to Mexico. The need for adequate psychiatric education programs for returning physicians is emphasized.

187. Belnasso, G., Tapia, L.L., and Tapia, H.L. Determining factors in migration and adaptation of Mexican psychiatrists to the United States – a Mexican viewpoint. *American Journal of Psychiatry*, vol. 126, March 1970, pp. 1318-21.

In a study of 100 Mexican psychiatrists who have trained in the United States, only 46 were found to have returned to Mexico. Financial and professional opportunities, poor family, decreased professional and cultural ties with Mexico, and marriage to non-Mexicans seemed to be the most significant reasons for remaining in the United States.

188. The brain drain: Europe's young physicians seek opportunities in the United States. *West Virginia Medical Journal*, vol. 63, June 1967, pp. 184-85.

Causes of brain drain, the dilemma of the British National Health Service, and the quality of medical science in the United States are reviewed in this article prepared by the staff of the American Medical Association.

189. Emigration of British doctors to the United States of America and Canada. Report and recommendations of a Ministry of Health Interview Board on interviews and discussions in North America with British-trained doctors. *British Medical Journal*, vol. 1, January 6, 1968, pp. 45-48.

A total of 135 British doctors were interviewed in the United States and Canada by a British Ministry of Health Interview Board concerning their reasons for emigration and factors that would prompt them to return. Job opportunities in Britain were also discussed.

190. Evans, J. P. Notes on the foreign medical graduate problem in North America. *British Journal of Medical Education*, vol. 4, 1970, pp. 249-51.

Factors fostering migration to the United States, the ECFMG, and possible inducements for return to home country are discussed.

191. Evans, J.P. and Rossin, A.D. The fate of foreign medical graduates in neurological surgery. *Journal of Neurosurgery*, vol. 30, March 1969, pp. 356-58.

Of 126 FMGs who received three years or more of neurosurgical training in the United States between 1950 and 1965, 43 percent stayed permanently in the United States. Program directors who are accepting FMGs for training should be interested in training them for service in the sending country and attempt to obtain firm assurances of the trainee's intent to return.

192. Gish, O. Britain and America: Brain drains and brain gains. *Social Science and Medicine*, vol. 3, January 1970, pp. 397-400.

British and U.S. migration policies and dependence on FMGs are compared.

193. Gwee, A.L. Brain drain. *World Medical Journal*, vol. 20, November-December 1973, pp. 113-14.

Brain drain is not viewed in this article as a new problem, but rather as a natural phenomenon that cannot be totally prevented. Instead of discussing measures to prevent brain drain, therefore, those in authority would be better employed in exploiting potential talent at home and reorganizing the system of employment of those they have trained.

194. Has the G.P. a place in the hospital? *British Medical Journal*, vol. 3, August 8, 1970, pp. 335-38.

Three doctors, including a general practitioner, a medical officer with a regional hospital board, and a consultant physician, express their views as to why British doctors emigrate.

195. Jonas, S. Why do they emigrate? *The Lancet*, June 5, 1967, pp. 1210-11.

Various studies estimating the amount of British doctor migration are reviewed. It is asserted that it is the conditions of practice, not the socialist principles of financing, which are causing doctors to emigrate. It is suggested that the career structure of the National Health Service should be changed to diminish migration.

196. Levy, S. *Some aspects of the international migration of human capital: The case of British physicians.* Thesis, Detroit, Michigan, Wayne State University, December 1969.

This dissertation attempts to apply the concept of human capital and its theoretical framework to an analysis of some aspects of the international migration of high-level manpower. The theoretical section begins with a critique of the "internationalist" model in which migration is viewed as a positive force for both donor and recipient countries, and goes on to show that under certain assumptions such migration will result in a reduction of the per capita income of the non-migrants in the country of origin. The findings in the empirical study suggest that the British system of financing medical education tends to encourage the emigration of graduates. Professional earnings, educational costs, and rates of return to medical education and to investment in emigration are also estimated.
Several statistical tables and over 30 references.

197. Luft, H. *Determinants of the flow of physicians to the U.S.* Rand Publication no. P-4538, Santa Monica, California, December 1970.

The hypothesis of this study is that physicians planning to become permanent residents respond to different migration fostering factors than those who intend to emigrate only for specialist training. A general model is set forth and tested. The results show that income differential is the only factor relevant to immigrants, while relative income position is the critical factor for those seeking only training.
Several statistical tables and over 30 references. 118 p.

198. Margulies, H. and Bloch, L.S. *Foreign medical graduates in the United States.* Cambridge, Massachusetts: Harvard University Press, 1969.

A synopsis of the most influential factors affecting the migration of FMGs to the United States, and the professional qualities of FMGs are presented. Possible solutions are offered for the FMG problem and available data on the subject are reviewed.
Several statistical tables and over 30 references. 169 p.

199. Mascarenhas, R., *et al.* (Hospital care in Brazil) Official theme of First Interamerican Hospital Conference and Fourth National Hospital Conference. *Hospital de Hoje*, vol. 27, 1966, pp. 21-25. (Portuguese).

Expenditures on health care as a percentage of GNP in several countries including Brazil are studied. From these it was concluded that if Brazil devoted no more than 1 percent of total national output to pay for physicains' services, and if the number of physicians increased at a more rapid pace than the GNP, there might be a reduction in the monthly per capita income of Brazilian physicians which could lead to emigration.

200. Okediji, O.O. and Okediji, F.O. A consideration of some factors influencing the loss of Nigerian medical and paramedical personnel to developed nations. *West African Journal of Education*, vol. 17, February 1973, pp. 71-87.

The sample frame for this study consisted of three groups of Nigerians: students, graduates who had emigrated overseas, and returned graduates. A third of them administered a questionnaire that inquired about the age and ethnic distribution of the group, marital status, income, and parents' occupation. The majority preferred living in Nigeria to living in the United States, but at the same time most of them would like to work in the United States rather than Nigeria.

201. Prywes, M., Coordinator. The "brain drain" – an impromptu discussion. *Israel Journal of Medical Sciences*, vol. 4, May-June 1968, pp. 698-710.

During the Fourth Rehovoth Conference on Health Problems in Developing States held in August 1967, an open discussion was held on the brain drain. This is a verbatim transcript of that discussion.

202. Ronaghy, H.A., Williams. K.N., and Baker, T.D. Immigration of Iranian physicians to the U.S. *Journal of Medical Education*, vol. 47, June 1972, pp. 443-45.

For this study on the immigration of Iranian physicians, two questionnaires were developed, one for Iranian physicians who remained in the United States, and the other for U.S. trained Iranian physicians who returned to Iran. Besides biographical data, information was sought on both positive and negative motivating factors. Professional considerations were found to be most important, followed by financial reasons and compulsory military service in Iran.

203. Subramanian, R. Medical brain drain. *Journal of the Association of Physicians in India*, vol. 20, January 1972, pp. 27-30.

The low pay of physicians and ill-equipped rural health centers and hospitals in India are criticized and cited as a cause for migration.

204. West, K. M. Some opinions and myths concerning foreign medical graduates. *Federation Bulletin*, vol. 56, December 1969, pp. 338-51.

Several commonly held ideas about medical migration are viewed as misconceptions, including the tendency to regard all FMGs as a homogeneous group, the feeling that the quality of care given by an FMG is inferior to that of U.S. medical graduates, and the belief that poor countries should keep their physicians regardless of their capacity to pay for them. The roles of the ECFMG and State boards are examined.

205. Wilson, I. K. Emigration and immigration of New Zealand doctors. *New Zealand Medical Journal*, vol. 74, November 1971, pp. 325-28.

The results of an inquiry to ascertain why New Zealand medical graduates emigrate and how they could be encouraged to return are reported.

See also entries 17, 25, 27, 42, 44, 45, 47, 49-54, 56, 57, 60, 62, 67-69, 71, 75, 76, 78, 86, 87, 92, 95, 101, 103, 117, 120, 125, 135-138, 151, and 154.

III. CAUSES OF NURSE MIGRATION

206. Majumdar, C. The Indian nurse abroad. *The Nursing Journal of India*, vol. 61, June 1970, p. 180.

Low social prestige and lack of respect for nurses in India are viewed as reasons for their migration.

207. Seivwright, M. Project report on factors affecting mass migration of Jamaican nurses to the United States. *Jamaican Nurse*, vol. 5, December 1965, pp. 8-13.

A survey was conducted among a random sample of 25 Jamaican registered nurses in New York for the purpose of investigating what these migrant nurses consider to be the most important factors influencing the mass exodus of nurses from Jamaica, their reactions to life and work in the United States, and their feelings about returning to Jamaica. As a group, the nurses were highly dissatisfied with the practice of nursing in Jamaica. They criticized long hours and other unfavorable working conditions, lack of opportunities for postgraduate study and promotion, inadequate salaries, and poor relationships with supervisors. The eight hour shift system and freedom to choose the preferred tour of duty and specialty were among the things most liked in the United States.

See also entries 106, 154, and 182.

IMPACT OF MIGRATION

I. IMPACT OF DONOR COUNTRY

208. Asher, R.E. Brain drain to brain gain. *CERES FAO Review*, vol. 2, January-February 1969, pp. 22-25.

It is asserted that "high skills are part of a developing country's irreplaceable wealth, but a man's brain is above all his own." The many dimensions of migration, the relationship between migration and the development process, and measures for mitigating the outflow are discussed.

209. Bana, T. and Flahault, D. *(Study of the need for doctors in the Republic of Niger)* Niamey, Ministere de la Sante Publique, 1964. (French).

The present medical manpower situation in Niger is studied, and the need for doctors in the next two decades is calculated. Niger is far behind 15 other African nations in its doctor/population ratio. The medical profession is not a popular career choice because of bad working conditions in rural areas and because the government sends students to study in other African nations and not in Europe. Emphasis is given to the necessity of planning for the Africanization of the medical corps and of reversing the tendency of native doctors to stay abroad for long periods to specialize.
25 p. and annexes.

210. Berry, R.A. and Soligo, R. Some welfare aspects of international migration. *Journal of Political Economy*, vol. 77, September-October 1969, pp. 778-94.

The conditions under which emigration benefits or harms the remaining population of a country under fairly standard classical market assumptions are explained. The emigration of labor is found to cause loss to the remaining population except where a) emigrant groups have relatively high wealth-holding propensities and b) they leave some or all of their capital behind them in the native country. Preliminary investigation suggests that the results would apply to growing economics. Physicians are not specifically mentioned in this paper.

211. Grubel, H.G. Non-returning foreign students and the cost of student exchange. *International Educational and Cultural Exchange*, vol. 1, Spring 1966, pp. 20-29.

The ways in which a country may be said to lose as a result of emigration are examined. An economic cost-benefit analysis is presented which measures the value of these losses and compares it with the value of overall benefits gained by native countries. It is concluded that there is a strong indication that the nonreturn of foreign students increases overall world welfare.

212. Grubel, H.B. and Scott, A. The international flow of human capital. *American Economic Review*, vol. 56, May 1966, pp. 268-74.

In this analysis of issues related to the international flow of human capital it is asserted that if a country wishes to maximize the income available to all its people, emigration should be welcomed, provided two conditions are met: first, that the emigrant improves his own income, and second, that his departure does not reduce the income of those remaining. The main part of the paper is devoted to specifying the circumstances under which the second holds true. Long-run losses to a native country in a market economy are believed to be small and benefits sizable.

213. Hyde, H. van Z., ed. *Manpower for the world's health.* Evanston, Illinois: Association of American Medical Colleges, 1966. Also in *Journal of Medical Education*, vol. 41, part 2, September 1966, pp. 25-134.

The proceedings of the 1966 Institute on International Medical Education are presented. Part I includes the keynote address. Part II discusses the rationale of the World Program for Health Manpower. Part III summarizes the medical,

educational, and social factors which bear on medical education in developing countries. Part IV deals with patterns and effectiveness of past and present programs of international cooperation in medical education and includes a chapter on FMGs.

214. Johnson, H. G. The economics of the brain drain: The Canadian case. *Minerva*, Spring 1965, pp. 299-311.

The costs and benefits of the migration of the highly educated are explored from an economist's point of view and it is felt that, contrary to common belief, the cost of migration may be relatively small. In Canada, there really is no brain drain, rather it is a "brain tap."

215. Johnson, H. G. Some aspects of brain drain. *The Pakistan Development Review*, vol. 7, Autumn 1967, pp. 379-411.

The cultural and economic determinants of migration are reviewed, and it is asserted that the international circulation of human capital is a beneficial process and that competitive market pressures for educated labor will, in the long run, promote economic growth and a more desirable society. Increased development assistance and lower barriers to the immigration of unskilled labor are seen as necessary.

216. Long, E. C. Medical specialization and world health needs. *Journal of the American Medical Association*, vol. 217, September 20, 1971, pp. 1688-90.

The development of modern medical specialties is reviewed. Traditional medical specialization is viewed as inapplicable to prevalent conditions in the developing countries. "Clinician-managers" are needed in addition to "organ-based specialists." Medical specialty training should be planned and regulated wholly within established national health manpower quotas, and institutions in the United States should exercise responsibility in training FMGs.

217. Perkins, J. A. Foreign aid and the brain drain. *Foreign Affairs*, vol. 44, July 1966, pp. 608-19.

A short account is given of the history of development theory, with reference to its recent emphasis on trained manpower. The characteristics and social evolution of modernizing man are examined, and the developed countries are criticized for the fact that "while with one hand we give laboratory equipment, train teachers, send our teachers, build buildings . . . with the other hand we take away not only the raw materials, but the very people who have been so carefully trained to develop them." Suggestions are made for ways to encourage this pool of manpower to stay home.

218. Rosenheim, M. The role of the United Kingdom in world medicine. Symposium on problems of world medicine. *Proceedings of the Royal Society of Medicine*, vol. 63, part 2, November 1970, pp. 1208-13.

A short overview of postgraduate training of overseas physicians and problems associated with these are presented in this speech, which is followed by a discussion.

219. Wellington, J.S. Indonesian physicians studying abroad. *Journal of Medical Education*, vol. 43, November 1968, pp. 1183-91.

A total of 225 Indonesian physicians physicians were sent to the United States and Europe from the academic staffs of the two oldest medical schools in the country. A group of 16 was interviewed to investigate the effect of postgraduate training in Western countries on their work and attitudes. Overall, there was a high degree of satisfaction both with overseas training and subsequent accomplishments, although some were unable to utilize substantially their new knowledge in their present situation.

See also entries 35, 46, 50, 54, 57-60, 73, 88, 95, 114, 115, 117, 118, 122, 128, 139, 145, 146, 148, 159, 160, 162, 168, 173, 176, 181, 201, and 305.

II. IMPACT ON RECIPIENT COUNTRY

220. Beijer, G. Selective migration for and brain drain from Latin America. *International Migration*, vol. 4, 1966, pp. 28-36.

A brief literature review of the migration problem, particularly in Latin America, is presented. A wise use of highly qualified immigrants from Europe and North America to Latin America, it is felt, might be a positive contribution to the economic development of most Latin American countries.

221. Bernhardt, R. von. (Foreign manpower in German hospitals) *Krankenhaus*, vol. 58, 1966, pp. 445-52. (German).

Every sixth to seventh physician in German hospitals is foreign. They are, however, only allowed to work there for two years. The foreign nursing force, their training, language, and other problems, are discussed. A separate section on the experience with East Asian nurses is included.

222. Bui-Dang-Ha Doan, J. (Some demographic aspects of "brain" migrants [brain drain]: A French example.) In *International Population Conference*, 1969. London, 1971, pp. 2705-10. (French).

This study of French physicians in private practice is based on data collected before, during, and after the return to France of French-nationality physicians from Algeria, which took place from 1962-1965. It was concluded that the return migration lessened to some extent France's physician manpower shortage, and also resulted in a higher average age within this group. It might have had some psychological effects on "marginal professionals," such as women physicians, in France.

223. Butter, I. Health manpower research: A survey. *Inquiry*, vol. 4, December 1967, pp. 5-41.

A framework for health manpower research is developed. The economic concepts of demand for health manpower and its determining factors, plus the supply of health manpower and its determinants, such as international migration, are discussed. Health manpower planning and legislation are reviewed. Concentration is on economics and operations research in the U.S. context.

224. Butter, I. and Grenzke, J. Training and utilization of foreign medical graduates in the United States. *Journal of Medical Education*, vol. 45, August 1970, pp. 607-17.

Critical issues, such as graduate training and utilization of FMGs, created by the growing volume and changing nature of FMG migration to the United States are summarized. The Immigration Act of 1965 and its implications are examined. Detailed analyses of presently available data are expected to clarify the issues.

225. Butter, I. and Schaffner, R. Foreign medical graduates and equal access to medical care. *Medical Care*, vol. 9, March-April 1971, pp. 136-43.

American Medical Association data from 1968 are examined to determine the impact of FMGs on the geographic distribution of physicians in the United States. Doctor/population ratio data indicate that FMGs have increased the disparity in the availability of physicians' services between rural and urban areas and among States.

226. Cargill, D. Recruiting to general practice in England and Wales, 1961-69. *The Lancet*, December 13, 1969, pp. 1295-96.

The proportion of recruits to general practice with United Kingdom or Irish qualifications fell from 96 percent to 80 percent from 1961 to 1969, while that of recruits with Asian medical degrees rose from 4 percent to 18 percent.

227. Cargill, D. Recruitment to general practice in Essex and Birmingham. *The Lancet*, March 29, 1969, pp. 669-70.

Recently the proportion of recruits to general practice from outside Great Britain has risen to 26 percent in Essex and 39 percent in Birmingham. Holders of Asian qualifications are 16 percent in Essex and 27 percent in Birmingham.

228. Gish, O. Alien, old Commonwealth and new Commonwealth workers. *Race*, vol. 9, April 1968, pp. 520-22.

A short explanation is given of the regulations regarding work vouchers in the United Kingdom.

229. Hambleton, J.W. Foreign medical graduates and the doctor shortage. *Inquiry*, vol. 9, December 1972, pp. 68-72.

In this critique of Schaffner and Butter's article (entry no. 238), physician distribution in the inner cities is studied by zip code areas, and it is concluded that on a purely geographic basis neither specialists nor general practitioners are less accessible to residents of poor or minority neighborhoods. There must then be institutional limitations to equal access to medical care, and if FMGs in fact work as key staff in public hospitals and clinics, their immigration may mean a reduction in the relative doctor shortage.

230. Lapping, A. Our brown doctors. *New Society*, no. 357, July 31, 1969, pp. 161-62.

The problems of Commonwealth doctors in the United Kingdom and the prejudice directed toward them are discussed.

231. Margulies, H. FMGs: An unsolved crisis in U.S. hospitals. *Hospital Progress*, vol. 49, June 1968, pp. 70, 71, and 82.

The impact of FMGs on patient care is discussed. U.S. hospitals are viewed as often having selfish motives in employing FMGs and failing to provide adequate training programs for them. Remedies are suggested but many hospitals, it is felt, will not embrace them.

232. Margulies, H., Bloch, L.S., and Cholko, F.K. Random survey of U.S. hospitals with approved internships and residencies: A study of the professional qualities of foreign medical graduates. *Journal of Medical Education*, vol. 43, June 1968, pp. 706-16.

A survey was made of 172 hospitals chosen on a proportional sampling basis. Each hospital administrator was sent a questionnaire, and each FMG and USMG surveyed filled out biographical data cards. The program directors of internships and the chiefs-of-service of residency specialties were chosen to rate the graduates. FMGs were judged to possess a level of professional knowledge and competence significantly below that of graduates of U.S. or Canadian medical schools. Recommendations to correct this were presented.

233. Marram, G. D. An untapped source of registered nurses. *Nursing Outlook*, vol. 17, July 1969, pp. 48-49.

Nurses trained in foreign countries are a sizable source of potential nursing manpower in the United States. Many of them have educational deficiencies that delay the process of obtaining State registration and licensure. Special courses should be offered them to overcome these difficulties. These courses should be on a State-wide basis and, financed by Federal and State funds, or both.

234. Miller, M.H., Workneh, F., Brody, E.B., Lewis, D.J., and Lin, T.Y. Foreign medical graduates: A symposium. *American Journal of Psychiatry*, vol. 130, April 1973, pp. 435-41.

The symposium on foreign medical graduates held during the annual meeting of the American Psychiatric Association begins with an introduction by Dr. Miller, followed by Dr. Workneh's review of FMGs as an alienated minority in psychiatry. Dr. Brody suggests a preventive approach to the FMG problem. Dr. Lewis discusses the possible implications of treatment of alienated patients by alienated FMGs. In conclusion Dr. Lin discusses the psychiatric and educational background of FMGs.

235. Organization for Economic Cooperation and Development. *Seminar on problems of science policy, Jouy-en-Josas, France.* OECD, 1967, pp. 28-38.

The problems of high-level migration to the United States are discussed in the keynote address.

236. Peterson, O.L. and Bendixe, H.H. A critique of graduate medical education in community hospitals, *Journal of Medical Education*, vol. 44, 1969, pp. 762-67.

The origin and academic performance of FMGs are reviewed briefly, and suggestions are made concerning qualifications and training of FMGs responsible for patient care.

237. *Report of the National Advisory Commission on Health Manpower*, volume I. Washington, D.C.: U.S. Government Printing Office, November 1967. pp. 17-19, 42-44, and 80-81.

FMGs are discussed in two contexts, first, as an additional supply of physicians and second, in relation to quality of care. It is recommended that FMGs who will have responsibility for patient care should be required to pass the National Boards. FMGs should also participate in an orientation and education program before entering graduate training. It is suggested that a Commission on Foreign Medical Graduates be established outside the government.

238. Schaffner, R. and Butter, I. Geographic mobility of foreign medical graduates and the doctor shortage: A longitudinal analysis. *Inquiry*, vol. 9, March 1972, pp. 24-33.

Longitudinal data from AMA tapes were used to study the relationship between the relative shortage of physicians and the international and interstate migration of FMGs. Data indicate that the interstate movement of FMGs shows a moderate trend toward relieving relative shortages. However, this trend is not strong enough to counteract the geographic disparity which results from the initial location of FMGs entering the United States and the existing geographic maldistribution of U.S. doctors. (See also entry no. 229.)

239. Townsend, N.I. Unlicensed foreign doctors can get you in trouble. *Medical Economics*, vol. 46, December 22, 1969, pp. 108-12.

U.S. hospitals are warned against hiring unlicensed foreign doctors. Malpractice cases resulting from inadequate care by unlicensed FMGs are cited.

See also entries 10, 17, 19, 21, 27, 29, 32, 34, 37-40, 87, 99, 109, 142, 192, 198, and 204.

III. IMPACT ON DONOR AND RECIPIENT COUNTRIES

240. DeVincenzo, D.K. Immigration changes to affect influx of foreign nurses to U.S. *Chart*, vol. 65, June 1968, pp. 188-89.

The ANA "Statement on Practices Relating to Nurses from Abroad" is presented. The ANA opposes the active recruitment of nurses from countries that are critically undersupplied. Practices deviating from the educational and cultural intent of the exchange visito program are listed.

241. Grey-Turner, E. European Common Market and British medicine. *British Medical Journal*, vol. 3, July 25, 1970, pp. 216-18.

The history and institutions of the EEC are reviewed. Articles of the Treaty of Rome that are of particular concern to the medical profession are discussed in detail. The three draft directives of the European Commission related to setting up a medical practice in another member nation are explained. They are: freedom to enter self-employed practice in another member state, mutual recognition of doctors' qualifications, and coordination of legislative and administrative procedures to facilitate this recognition.

242. Shearer, J. C. In defense of traditional views of the "brain drain" problem. *International Educational and Cultural Exchange*, vol. 2, Fall 1966, pp. 17-25.

H. Grubel's theory that migration is basically positive for both donor and recipient countries is criticized and refuted point by point. (See also entries 122, 211, and 212.)

See also entries 12, 18, 36, 83, 86, 92, 96, 101, 103, 105, 119, 135, 140, 143, 153, 156-158, 177, and 196.

METHODOLOGY FOR THE STUDY OF MIGRATION

I. STUDY OF THE MIGRATION PROCESS

243. Briggs, A. *Report of the Committee on Nursing.* London: Her Majesty's Stationery Office, October 1972, pp. 230-33.

The methodology of a survey of overseas nurses in Britain is described. In addition to a postal survey of all nurses, 259 foreign nurses were interviewed using a structured questionnaire. It was found that difficulties of the latter group mainly centered around choosing a hospital and a course and adjustment during the first weeks in Britain.

244. Myers, R.G. Comments on the state of research: "Brain drains" and "brain gains." *International Development Review*, vol. 9, December 1967, pp. 4-8.

Measurement problems, motivations of migrants, and the need to correlate migration with other factors such as professional field and personality types are discussed. The need to assess the possible gains and losses in the national context is emphasized.
Over 30 references.

See also entries 20, 72, 73, 83-87, 96, 99, 111, 113, 119, 136, 155, 165, 168, 171, 172, 174, 177, 184, 196, 197, 207, 210, 215, 222, 229, 232, and 238.

II. STUDY OF MIGRANT CHARACTERISTICS

245. Antler, L. Correlates of home and host country acquaintanceship among foreign medical residents in the United States. *Journal of Social Psychology*, vol. 80, February 1970, pp. 49-57.

A survey was made of 170 FMGs who were training in the United States. They were asked to report the frequency of their personal contacts with home countrymen and U.S. hosts, their attitudes toward home countries, their motivations for seeking specialty training in the United States, and their satisfaction with the training programs and the United States. It was found that the frequency of their personal contacts with their own countrymen had an important relation to nationalistic attitudes, motivation, and adjustment. Overall results were explained in accordance with reference group theory. Acculturation explained the differences among subject groups.

246. Antler, L., Zaretsky, H., and Ritter, W. The practical validity of the Gordon Personal Profile among the United States and foreign medical residents. *Journal of Social Psychology*, vol. 72, August 1967, pp. 257-63.

The Gordon Personal Profile was administered to 281 USMGs and FMGs training in university-affiliated hospitals. Among the FMGs, extreme scorers on the Emotional Stability scale were strongly differentiated with respect to criterion measures of adjustment and performance. Moreover, high scorers on the Emotional Stability scale obtained significantly higher scores on the Ascendancy and Responsibility scales. Similar comparisons among the U.S. group were generally inconclusive. Support of the practical validity of the Gordon Personal Profile was discussed.

247. Dacso, M. M., Antler, L., and Rusk, H. A. The foreign medical resident training in the United States. *Annals of Internal Medicine*, vol. 68, May 1968, pp. 1105-13.

Fifty foreign and fifty U.S. internal medicine residents were studied for educational, professional and social background, motivation, adjustment, attitudes toward U.S. and foreign doctors, and expectations about the United States. An overview suggests that the degree of Americanization of the residents was an important factor in their supervisors' evaluation of their performance and in their personal and professional adjustment to both the United States and their training program.

248. Halberstam, J. L., Antler, L., Rusk, H. A., and Seltzer, J. D. Foreign interns in community hospitals. *Journal of Medical Education*, vol. 46, June 1971, pp. 504-17.

The major purpose of this investigation was to study the experience of foreign interns in community hospitals from their own point of view. The majority of community hospitals refused to have their interns interviewed, but a total of 200 foreign interns were interviewed. Foreign interns' assignments in community hospitals appear to be for service purposes primarily, rather than for training. There was evidence that the prestige gained by physicians in their home countries comes from the type of hospital in which they were trained, rather than from merely having been in the United States.

249. Halberstam, J. L. and Dacso, M. M. Foreign and United States residents in university-affiliated teaching hospitals: An investigation of United States graduate medical education. *Bulletin of the New York Academy of Medicine*, vol. 42, March 1966, pp. 182-208.

Selected parts of a four year study entitled "Cultural and Personality Factors Affecting the Adequacy of Graduate Medical Training of Foreign Physicians in the U.S." are reported. The subjects were 170 foreign-born and -educated residents and 150 U.S.-born and -educated residents. Both groups were subdivided into residents training in internal medicine, physical medicine and rehabilitation, and surgery. For study results, see entry nos. 250 and 265.

250. Halberstam, J.L., Rusk, H.A., and Taylor, E. J. Foreign surgical residents in university affiliated hospitals: A unique case in United States graduate medical education. *Annals of Surgery*, vol. 171, April 1970, pp. 485-500.

Fifty foreign and fifty U.S. residents in surgery were studied from the point of view of their own perceptions and evaluations of their training programs. FMGs rated U.S. medicine and physicians superior to themselves, and expressed a greater degree of nationalism in their motivation for entering medicine and specializing in surgery. Surgical residents adjusted more easily to U.S. life and medical practice than FMGs in other specialties. The ECFMG, the problem of brain drain, and relevance of U.S. training to needs abroad were discussed.

251. Harrison, B.E. *Foreign doctors in American hospitals: A sociological analysis of graduate medical education.* Thesis, Columbia University, 1969.

Socialization and learning experiences of foreign interns and residents in the United States are the focuses of this study. The research is based on mailed questionnaires to 491 FMGs and 3,297 USMGs, and interviews with chiefs-of-service and hospital administrators. The FMGs are found to be more dissatisfied with almost every aspect of their learning environment, with the exception of hospital rounds, than the USMGs. With regard to relations with patients, the FMGs are more "scientifically" oriented, as contrasted with the USMGs who are more often "patient problem" oriented. Several statistical tables and over 30 references. 474 p.

252. Marsh, C. G. and Halberstam, J. L. Personality stereotypes of United States and foreign medical residents. *Journal of Social Psychology*, vol. 68, April 1966, pp. 187-210.

Two groups of 139 U.S. and 142 foreign male residents were compared with the stereotyped personality characteristics of U.S. physicians. There was evidence to support the existence of these stereotyped characteristics among both groups, regardless of nationality. There was also evidence that the foreign surgeon is more readily accepted as a physician in the United States than is an FMG in internal medicine or physical medicine and rehabilitation.

See also entries 13-15, 20, 23, 24, 40, 42, 69, 80, 86, 87, 90, 99, 117, 119, 148, 149, 151, 166, 187, 200, 202, 219, and 225.

INTERVENTION STRATEGIES

I. PHYSICIAN MIGRATION

253. Bustamante, G.M. The exodus of Filipino physicians. *Journal of the Philippine Medical Association*, vol. 43, January 1967, pp. 80-82.

In this short speech decrying the Philippine brain drain, the government is called upon to increase appropriations for health and research, to create more positions for young medical graduates, and to adopt a national health insurance system.

254. Cordice, J.W.V., Jr. Medical education: Role of the foreign physician in the United States of America. *Journal of the National Medical Association*, vol. 59, July 1967, pp. 260-64.

In recent years, the character of the FMG in the United States has changed from immigrant or refugee to that of seeker of superior professional experience and training. It is argued that to provide this training, the United States should shift the emphasis on locale of training from the United States to foreign locales, through systems of visiting faculties or inter-institutional co-operation. This could be initiated as part of the U.S. foreign aid program through a strong central agency.

255. Gish, O. Medical education and the "brain drain." *British Journal of Medical Education*, vol. 3, March 1969, pp. 11-14.

Medical education in countries experiencing large emigration of physicians should be redesigned so that it is directly related to the type of health problems of the respective country. It is felt that this would be an effective curb on migration.

256. World Health Organization. *Training of national health personnel: Progress report by the Director-General.* 25th World Health Assembly. Provisional agenda item 2.4. Geneva, 1972.

The WHO's past efforts to diminish medical migration are reviewed. A new "multi-national study on the international flow of physicians and nurses" is proposed.
5 p.

See also entries 29, 33, 37-39, 44-48, 50, 51, 53, 54, 56, 57, 60-62, 76, 86, 87, 99-101, 103, 117, 118, 123-125, 137, 151, 182, 190, 195, 198, 201, and 205.

II. NURSE MIGRATION

See entries 61, 154, 182, 240, and 256.

III. MULTI-PROFESSIONAL MIGRATION

257. Abraham, P.M. Regaining high-level Indian manpower from abroad – A review of policies, programs, and problems. *Manpower Journal*, vol. 3, January-March 1968, pp. 83-112. (An excerpt appears in *Development Digest*, vol. 7, April 1969, pp. 69-76.)

In 1968, the government of India created the Scientists Pool, which has since become the government's main instrument in attracting scientists and technologists from abroad. The Pool provides temporary employment for returning Indian scientists. The Union Public Service Commission has made special arrangements to allow overseas candidates to compete for vacancies. Other measures taken by the government to attract high-level manpower are also described.

258. Copeland, W. A. The Pahlavi-Pennsylvania contract. *International Development Review*, vol. 10, September 1968, pp. 21-23. (An excerpt appears in *Development Digest*, vol. 7, April 1969, pp. 58-61.)

In 1962, in response to the high non-return rate of Iranian students, a new U.S.-type university was established in Shiraz. A cooperative program between the University of Pennsylvania and Pahlavi University allowed for recruitment of Iranians in the United States for faculty positions in Pahlavi University, joint research proposals, and exchange of professors and students. Over 200 applicants, most with doctoral degrees, were recruited and approximately one-half offered positions.

259. Pan American Health Organization. *Science policy in Latin America: Substance, structures, and processes.* Washington, D.C.: PAHO Scientific Publication No. 119, 1966, p. 22.

The problem of migration in the context of science policy is pointed out.

260. Parthasarathi, A. Brain drain from developing countries. *Nature* (London), vol. 230, March 12, 1971, pp. 87-90.

Several possible intervention strategies to stem the loss of scientific and technical manpower from the developing countries are suggested. These include changes in education and in immigration and emigration policies, better communication with the students studying abroad, and new institutional structures.

See also entries 44, 85, 116-118, 121-126, 128, 137, 139, 141-146, 148, 151-153, 157, 159-162, 166, 168, 171, 178, 180, 193, 208, 217, and 305.

TRAINING AND EVALUATION OF FOREIGN PHYSICIANS AND NURSES

I. TRAINING OF PHYSICIANS AND NURSES

261. Boesten, H. (Experience of a German resident at a university psychiatric clinic in the U.S.A.) *Nervenarzt*, vol. 41, September 1970, pp. 444-51. (German with an English summary).

A German resident describes his experiences at the Department of Psychiatry of the University of Rochester Medical Center. The structure and capacity of the Center are described, as well as various aspects of the training program. The differences between training and clinical work in the United States and the Federal Republic of Germany are discussed.

262. Cahill, K. M. Tropical disease training for foreign physicians in the United States. *Journal of the Irish Medical Association*, vol. 62, March 1969, pp. 107-08.

A tropical disease training program oriented to the clinical and public health needs of FMGs and their homelands is described. It is given by the Tropical Disease Center of New York City.

263. Cox, M. Problems of overseas nurses training in Britain. *International Nursing Review*, vol. 19, 1972, pp. 157-68.

In a British Council study of overseas nurses studying in Great Britain, it was found that 28 percent of them left without achieving the qualification for which they had enrolled. The problems of these nurses in training, adjustment, and language are reviewed and recommendations made.

264. Essex-Lopresti, M. Training of junior hospital medical staff in the southwest metropolitan region. *The Lancet*, vol. 1, February 13, 1971, pp. 337-39.

Arrangements for centrally reviewing the progress of junior hospital medical staff and offering career guidance were introduced. Of this staff, 54 percent were overseas graduates and 18 percent intended to settle in the United Kingdom. Eleven percent of United Kingdom graduates proposed to emigrate. A scheme was developed in which established posts in the senior house-officer and registrar grades were linked to provide a sequence of appointments for planned training.

265. Fisch, A. and Dwyer, T.F. Interactive television in the continuing education of foreign-trained psychiatrists. *Journal of Medical Education*, vol. 47, November 1972, pp. 912-14.

Bidirectional, interactive television was used to present psychiatric information to foreign-trained psychiatrists who were preparing for their specialty boards. Participants maintained a high-level of interest and achieved a high degree of confidence in their abilities.

266. Freeman, M. A. Possible future trends of medical staffing in the hospitals of England and Wales. *British Medical Journal*, vol. 4, December 6, 1969, pp. 612-15.

An attempt is made to calculate the number of maximum part-time consultant surgeons needed in England and Wales and the number of junior staff needed to train and maintain these consultants. The overseas doctors' role is discussed in this context.

267. Grillo, H. C. A program of regional collaboration in surgical education for foreign medical graduates. *Journal of Medical Education*, vol. 41, September 1966, pp. 865-69.

The resources of the surgical branch of a large teaching hospital, Massachusetts General Hospital, and a small number of community hospitals were combined in order to provide a program of surgical education for a small number of recent

graduates of foreign medical schools. Training begins with a period of preceptorship at Massachusetts General and then the FMG transfers to an affiliated hospital for primary house-staff experience. Communication with the core hospital is maintained through rounds and seminars.

268. Halberstam, J. L. and Dacso, M. M. A cross-cultural evaluation of graduate training in physical medicine and rehabilitation by foreign and United States residents. *Archives of Physical Medicine and Rehabilitation*, vol. 47, September 1966, pp. 621-32.

Seventy-five foreign and fifty U.S. residents in physical medicine and rehabilitation were examined for their perceptions and evaluations of their training program and sojourn experiences. FMGs rated the U.S. physicians superior to themselves. The two groups were remarkably alike in many respects and received similar treatment in hospitals. Consciousness of national need appeared to be an imporant influence on the foreign resident's choice of this specialty.

269. Henderson, G. How do other countries feel about our management of their medical graduates? *Federation Bulletin*, vol. 56, November 1969, pp. 309-25.

Statements made by other countries on the FMG training experience in the United States are reviewed and it is concluded that foreign countries do not think about it very much.

270. Hodari, A. A. Graduate education of the foreign physician in obstetrics and gynecology in the United States. *Obstetrics and Gynecology*, vol. 33, March 1969, pp. 443-47.

In 1967, 28.5 percent of the total residents in obstetrics and gynecology in the United States were foreign graduates; in non-affiliated hospitals, 35 percent were foreign graduates. The foreign residents' need for diversified obstetric and gynecological training is emphasized, and skills felt necessary for FMGs to master are listed.

271. Hunt, G.H. The brain drain in medicine. *Medical Annals of the District of Columbia*, vol. 35, August 1966, pp. 441-42.

Goals for the training of FMGs and the future of hospital services provided by interns are explored.

272. Lewis, D.J. Canadian training for residents from developing countries. *Canadian Psychiatric Association Journal*, vol. 15, April 1970, pp. 111-13.

A follow-up was made of the 1958-64 and 1967-68 diplomates of the McGill University postgraduate course in psychiatry. Results showed that less than one-fifth of the graduates went to a developing country. Of those who came from a developing country, one-third went home in the earlier period and one-quarter in the latter.

273. Lin, T., Char, W. F., Brody, E. B., *et al.*, Beaubrun, M. H., and Miller, M. H. Psychiatric training for foreign medical graduates: A symposium. *Psychiatry*, vol. 34, August 1971, pp. 233-57.

Dr. Lin began this symposium with an introduction concerned with the role of FMGs in American psychiatry. Dr. Char discussed the adaptation problems of foreign psychiatric residents with a case example of a Korean M.D., and described the ways U.S. training programs deal with foreign residents, including overt rejection, subtle rejection, denial of reality, or a combination of these. Dr. Brody, *et al.* wrote about the intellectual and emotional problems of FMGs in learning psychiatric theory and practice. Dr. Beaubrun looked at foreign medical training from the viewpoint of the developing world and recommended some solutions to the brain drain. In conclusion, Dr. Miller talked about the FMG as disappointed person.

274. Millis, J.S. The foreign medical graduate: Problem and opportunity. *Journal of Medical Education*, vol. 46, April 1971, pp. 312-16.

The problems of foreign medical graduate programs are discussed. It is stated that these problems are exactly the same as those of American medical education.

275. Mittel, N. S. Training psychiatrists from developing nations. *American Journal of Psychiatry*, vol. 126, February 1970, pp. 1143-49.

Foreign physicians face critical linquistic and cultural barriers to learning American psychiatry. Training programs usually forge their professional identity so that it becomes incompatible with medical realities in their own countries. Moral dilemmas complicate the identity crisis. Adequate training requires special emphasis on the social sciences and public health.

276. Rush, W. E. Medical orientation U.S.A. program: A preliminary report. *Journal of Medical Education*, vol. 47, June 1972, pp. 440-42.

The success of a four month course given to a group of foreign interns prior to their internships in Saint John Hospital, which is affiliated with Saint Louis University, is reviewed.

277. Sutnick, A. I., Reichard, J. F., and Angelides, A. P. Orientation of foreign medical graduates. *International Educational and Cultural Exchange*, vol. 6, September 1971, p. 91.

Over 1,100 foreign doctors and nurses served in Philadelphia hospitals in 1971. The various programs aimed at easing their adjustment to working in a strange hospital and living in a new land are described.

278. Sweeny, V. K. Working with nurses from overseas. *American Journal of Nursing*, vol. 73, October 1973, pp. 1768-70.

The efforts of the Montefiore Hospital and Medical Center in New York City to help its foreign nurses adjust to life in the United States are described. The main emphasis is on nurses with temporary visas, rather than those with permanent resident visas.

279. Wellington, J. S. Malaysian physicians' evaluation of their training abroad. *Journal of Medical Education*, vol. 44, October 1969, pp. 919-24.

The background and experience abroad of 18 Malaysian medical school faculty members, who were sent overseas with the understanding that they later return home to faculty appointments, are examined in this retrospective study. All honored their agreements. There was a high degree of utilization of the postgraduate training received abroad. They applied the same standards of excellence to medical education at home that they had seen abroad.

See also entries 4, 6-8, 11, 16, 18, 19, 23, 25, 34-36, 40, 53, 117, 137, 163, 174, 183, 191, 216, 218, 219, 224, 243, 245, 247-249, 252, 254, 255, and 275.

II. EVALUATION OF PHYSICIANS AND NURSES

280. Aumiller, J. (The American educational certificate for foreign medical graduates) *Munchener Medizinische Wochenschrift*, vol. 110, August 9, 1968, pp. 1816-19. (German).

The ECFMG examination is described. In 1967, 517 physicians who had passed the German medical examination took the ECFMG in West Germany and 301 passed. This was above the mean result, which for 1967 was approximately 46 percent.

281. Banziner, N. (Swiss placement bureau for foreign nursing personnel) *Zeitschrift fuer Krankenpflege*, vol. 62, 1969, pp. 482-83. (French).

The Swiss Placement Bureau for Foreign Nursing Personnel is described in terms of its placement activities, information and advisory services, and evaluation of diplomas of foreign nurses.

282. Davidson, H. A. We need still more foreign M.D.s! *Medical Economics*, vol. 45, February 5, 1968, pp. 78-83.

The obstacles an FMG must overcome in order to obtain licensure in the United States are criticized.

283. European passports. *Lancet*, vol. 2, November 3, 1973, pp. 1016-17.

During an EEC hearing on the mutual recognition of professional qualifications, held in Paris in October 1973, there was general agreement that the directives must, in addition to covering State supported doctors, also cover salaried doctors. The possibility of instituting a Common Market medical diploma was apparently ruled out. Establishing unified requirements for general practice and medical specialties was very difficult.

284. FLEX test hexes foreign M.D.s. *Medical World News*, May 23, 1969, pp. 35-37.

The experience of several States with the FLEX is described. It is concluded that a change from State boards to the FLEX has sharply reduced the percentage of FMGs who have passed licensing tests in some States.

285. Gish, O. Assessing Commonwealth trained doctors for the N.H.S. *Social and Economic Administration*, vol. 3, October 1969, pp. 264-72.

The history of a compulsory assessment scheme in Great Britain and problems associated with it are recounted. It is stated that this plan will operate almost entirely in the British interest, and the need for a proper training and assessment scheme is emphasized.

286. Gish, O. and de Maar, M. J. A. (European candidates and the examination for medical practice in the United States from 1946 to 1967) *Cahiers de Sociologie et de Demographie Medicales*, vol. 9, 1969, pp. 94-96. (French).

The failure rates of graduates of European countries on U.S. State board examinations are presented.

287. Lindholm, S. (To work in an industrial country: Australia) *Lakartidningen*, vol. 69, September 27, 1972, pp. 4535-41. (Swedish).

Licensure requirements for Swedish physicians wishing to practice in Australia and the possibilities of practice there are explained. The living conditions, such as tax structure and housing, are described. This is followed by an article by a Swedish immigrant physician in Australia who describes his experiences there.

288. Lindholm, S. (To work in an industrial country: Canada) *Lakartidningen*, vol. 69, October 4, 1972, pp. 4680-85. (Swedish).

Medical education and practice structure in Canada are described, together with taxes, social security, and pensions.

289. Lindholm, S. (To work in an industrial country: U.S.A.) *Lakartidningen*, vol. 69, September 20, 1972, pp. 4403-07. (Swedish).

Living and working conditions in the United States, the medical education system, licensure requirements, and the ECFMG are discussed. Taxes, social security, and health care structures are described.

290. de Moerloose, J. The international right of doctors to practice. *Archives Belges de Medecine Sociale, Hygiene, Medecine du Travail et Medecine Legale*, vol 26, 1968, pp. 507-58. (French).

The objective of this study is to delineate the general legal policies governing the practice of medicine in various countries, and to analyze the legislative policies which permit a doctor to practice in a country other than the one in which he has obtained his degree. The situation characteristic of countries with a Federal system of government, such as the United States and Canada, is first analyzed. The network of reciprocity of degrees found among the British Commonwealth countries is next studied. The liberal policy of Sweden in this regard in noted. The impact of the Treaty of Rome and the Scandinavian regional accord on the labor market for doctors is pondered.
Over 30 references.

291. Moncarz, R. Effects of professional restrictions on Cuban refugees in selected health professions in the United States, 1959-1969. *International Migration*, vol. 8, 1970, pp. 22-28.

An analysis was made of the extent of utilization or underutilization of the education and training of Cuban physicians, nurses, and other selected health workers who migrated to the United States since January 1, 1959. It was found that the recognition effect, i.e., employers acquiring confidence in Cubans after employing one of them, was of tremendous importance. There was a great lack of knowledge, either real or imaginary, on the part of the different State Boards and National Associations in regard to the educational experience and background of the Cubans.

292. Schweisheimer, W. (Foreign hospital physicians in the U.S.A.) *Landarzt*, vol. 44, March 20, 1968, pp. 389-90. (German).

The requirements and provisions of the ECFMG are explained and a brief general overview of foreign physicians in the United States is given.

293. Thung, P. J. International educational measurement - III. *IRME Newsletter*, vol. 9, June 1973, pp. 13-17.

Language factors were found to have a relatively minor influence on ECFMG examination results.

294. Weiss, J. M. A. Foreign certification in psychiatry. *American Journal of Psychiatry*, vol. 128, August 1971, pp. 229-30.

A survey of chairmen of psychiatric departments in the United States disclosed that a large majority of them regard certification in psychiatry by the Royal Colleges of Physicians and Surgeons of Canada and England as roughly equivalent to certification by the American Board of Psychiatry and Neurology. Certification by other foreign agencies is not considered equivalent.

See also entries 1, 27, 91, 101, 129, 198, and 237.

III. TRAINING AND EVALUATION

295. Council on Health Manpower. Health manpower: Progress report. *Journal of the American Medical Association*, vol. 210, December 1969, pp. 2078-80.

A Commission on Foreign Medical Graduates has been established in the United States. Its purpose is to make recommendations with respect to public and educational policy affecting or affected by FMGs.

296. Djernes, B. and Djernes, M. (Young physicians in the U.S.A.) *Ugeskrift for Laeger*, vol. 132, January 29, 1970, pp. 245-48. (Danish).

The U.S. medical education system and the ECFMG examination are explained.

297. Foraker, A. G. (Formative training for medical postgraduates in the United States) *Folia Clinica Internacional*, vol. 17, November 1969, pp. 556-62. (Spanish).

The general scope and character of graduate medical training in the United States are presented. Practical notes on program selection, duration of optimum training, internships, residencies, and financial aspects are offered. A typical program in Jacksonville, Florida is described.

298. The foreign medical graduate – responsibilities and liabilities. *Journal of Medical Education*, vol. 44, April 1969, pp. 314-16.

The U.S. medical migration picture is reviewed and some suggestions to improve training and statistics are made during this panel discussion at the annual meeting of the AAMC.

299. Gish, O. Immigrant doctors in Britain and America. *World Medicine*, vol. 4, August 26, 1969, pp. 27-31.

Hospital opportunities existing for FMGs in the United States and Great Britain are reviewed. The reorganization of training in Britain is viewed as necessary.

300. Heywood, L. T. The Commission on Foreign Medical Graduates. *Federation Bulletin*, vol. 59, August 1972, pp. 284-89.

The Commission's activities are commented upon.

301. Hirsch, E. O. An evaluation of the internship experience in New Jersey hospitals, 1966-1967 – A venture in voluntary regional cooperation. *Journal of the American Medical Association*, vol. 209, 1969, pp. 2031-34.

During 1966 and 1967, 29 New Jersey hospitals, with a total of 80 percent of the interns in the State, joined in an internship evaluation by means of a pre- and post-internship National Board Part III Examination. Improvement between the pre- and post-internship examination was roughly the same for foreign as for U.S. graduates, although FMGs obtained lower scores. There was a large conversion from fail to pass among foreign graduates.

302. Kolb, L. C. The matter of bias in the American Board of Psychiatry and Neurology. *American Journal of Psychiatry*, vol. 126, December 1969, pp. 888-91.

Charges made to the American Board of Psychiatry and Neurology that the Board is biased against candidates who trained in State hospitals or abroad, or who are members of minority groups, are considered. It is concluded that bias does not exist, but the preparation of these groups should be improved.

303. Shires, G. T. The foreign graduate as a surgical resident. *Surgery*, vol. 70, October 1971, pp. 549-50.

Statistical data on FMGs are reviewed. Thirty-five percent of all surgical residents are foreign graduates. The failure rate for FMGs on first examination by the American Board of Surgery is three to four times greater than for U.S. graduates on Part I of the exam, and one and a half times greater for Part II.

304. Sutnick, A., Kelley, P., and Knapp, D. The English language and the FMG. *Journal of Medical Education*, vol. 47, June 1972, pp. 434-39.

The English language test of the ECFMG is examined. It is concluded that it is possible to pass this English test but not be able to communicate adequately verbally. It is important that the individual hospitals evaluate the language proficiency of FMGs and provide instruction where needed.

See also entries 13-15, 29, 31, 32, 37-39, 45, 86, 87, 99, 204, 213, 231, 233, 236, and 250.

SUPPLEMENTAL ENTRIES

305. United Nations Educational, Scientific, and Cultural Organization. *Report of the Director-General on the answers of member states concerning the anxiety caused them by the migration of talent*. 17C/58, October 10, 1972.

This report is divided into three sections. The first examines certain problems which arise in studying and understanding the migration of trained manpower. Problems discussed include estimating the effects of migration, integration of educational and manpower policies in development priorities, and factors influencing motivation to migrate. The second section discusses possible measures which can be taken by donor countries, recipient countries, international organizations, and Unesco in cooperation with Member States at the national level. The report concludes with an examination of the importance of measures taken by governments to slow the brain drain related to the overall problem of development. It is felt that the brain drain is a result, not a cause, of underdevelopment, and it will only be effectively reduced by a full-scale attack on the latter issue.
The report is followed by three annexes. Annex I is a summary of results obtained by Unesco from Member States in a survey of international migration of trained manpower taken in 1969-70. Annex II presents case studies of the brain drain from Brazil, Chile, and Senegal. Annex III reports findings of a 1971 survey on migration of talent in relation to higher education. Responses were received from only 14 out of 25 countries.
23 p. and annexes.

306. Lockett, B.A. Foreign medical graduates and the quality of medical care in the U.S. *Eye, Ear, Nose & Throat Monthly*, vol. 53, August 1974, pp. 321-25.

The article discusses the complexity of the issue of FMGs in the U.S. both in terms of its qualitative and quantitative considerations. FMGs in the U.S. are discussed as symptomatic of the major problems of domestic health care. Data are provided for both the quantitative and qualitative aspects of the matter. Reference is made to current research, publications, policy decisions, and actions related to FMGs.
Several statistical tables.

307. Brandt, U.C., Weiss, R.J., Kleinman, J.C., and Harris, D. Evaluation of review courses for the ECFMG examination. *Journal of Medical Education*, vol. 50, January 1975, pp. 46-53.

In this paper, three review courses for the ECFMG examination are described. A comparison of the pass rates on the January 1973 ECFMG examination for examinees taking the courses with those not taking the courses shows a statistically significant difference. Although the courses appear to be effective, the limitations of the ECFMG examination as a screening device for FMGs make it unwise to expand the number of such courses. The cramming of basic medical knowledge into students is not a useful solution to the problem of physician shortages. The focus of attention on the FMG in the health care system must shift from a search for expedient ways of providing for greater utilization of FMGs to the deleterious effects of this utilization on the quality of patient care.
Several statistical tables.

308. Goldblatt, A., *et al.* Licensure, competence, and manpower distribution. *The New England Journal of Medicine*, vol. 292, January 16, 1975, pp. 137-41.

Medical statistics report USMGs licensed at higher rates than FMGs. This difference is often interpreted to show greater medical competence of USMGs. This study questions this interpretation by analyzing 1971 licensure rates for both groups who had been interns and residents in 1963. They found that factors unrelated to competence – namely, visa-citizenship status and State of examination – are associated with holding a license. Moreover, quality of medical education is not an accurate predictor of licensure. It follows that the use of licensure rates as measures of medical competence distorts understanding of the quality of medical care in the U.S. More probably, the difficulties in obtaining medical licensure experienced by FMGs result from the use of such graduates to relieve specific medical manpower shortages.
Several statistical tables.

309. Weiss, R.J., *et al.* The effect of importing physicians – Return to a pre-flexnerian standard. *The New England Journal of Medicine*, vol. 290, June 27, 1974, pp. 1453-58.

Increasing concern about the control of the quality of medical care raises the question of the dilution of the physical manpower pool with FMGs, who constituted 46 percent of new licentiates in medicine in the U.S. in 1972. The use of the ECFMG examination as a minimal level of educational quality for graduates entering the U.S. from medical schools in developing countries and the increasing number of such graduates entering the U.S. each year from those countries have produced a dual standard. Medical schools in the U.S. established controls over the input and process of medical education after the Flexner Report in 1910. Such controls do not exist in many foreign medical schools. Recommendations are made for control of a minimal educational level for physicians entering the U.S. health care system and implications of these recommendations are discussed.

310. Weiss, R.J., *et al.* Foreign medical graduates and the medical underground. *The New England Journal of Medicine*, vol. 290, June 20, 1975, pp. 1408-13.

A written questionnaire was distributed by the ECFMG to 4,035 FMGs taking the January 1973 examination in centers in the U.S. Forty-eight percent of the 3,935 respondents were working in the health field at the time of the examination. In general, married males on permanent visas who entered the U.S. before 1970 had the highest rate of employment in the health field. Those working in the health field had a lower passing rate on the examination than those not working. The questionnaire was followed by telephone interviews of a sample of 850 respondents designed to obtain more detailed information about job duties. Seventy-three percent of the 513 who reported working in the health field were involved in direct patient care, and 64 percent of these were employed in hospitals. Analyses of especific job duties revealed large numbers functioning independently and in unsupervised settings. The results suggest that serious problems exist in the control of the quality of care delivered in the American health care system.
Several statistical tables.

311. Dublin, T.D. Foreign physicians: Their impact on U.S. health care. *Science*, vol. 185, August 2, 1974, pp. 407-14.

The article discusses the physician migration issue and its impact on U.S. domestic health care. Data and information on immigration, the exchange visitor program, FMG performance on various screening examinations, and the concentration of FMGs in hospital practice are included. The role of Federal agencies in this matter is duscussed.
Several statistical tables.

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